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AVIATION READINESS: WHAT'S THE FLIGHT PLAN?

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HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON READINESS,
Washington, DC, Thursday, November 9, 2017.

The subcommittee met, pursuant to call, at 11:11 a.m., in room 2212, Rayburn House Office Building, Hon. Joe Wilson (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. JOE WILSON, A REPRESENTATIVE FROM SOUTH CAROLINA, CHAIRMAN, SUBCOMMITTEE ON READINESS

Mr. WILSON. Ladies and gentlemen, I call this hearing of the House Armed Services Committee Readiness Subcommittee on "Aviation Readiness: What is the Flight Plan?" to order. A year ago, this subcommittee heard testimony from each of your services about the readiness levels of military aviation. Infrastructure challenges, underfunded spare parts, and depot backlogs were a consistent theme.

Aviation readiness challenges do not stop at infrastructure—retention and training of critical skills from trained and experienced pilots to aviation maintenance personnel continues to plague the readiness recovery.

All of these challenges are competing with no lessening of operational demand in the fight against global terrorism and with the increasingly aging and overused aircraft.

Today I look forward to hearing about each service's aviation readiness, readiness recovery plans, readiness impacts to safety, and where we continue to take risk; calculated in terms of both risk to the force and risk to the mission.

I fully believe that the first responsibility of the national government is to provide for the national security of its citizens—and that is especially true of our sailors, soldiers, airmen, and marines; therefore, it is our responsibility as members of this subcommittee to continue to better understand the readiness situation and underlying problems across aviation and then for us to map a course which best assists in correcting any deficiencies and shortfalls.

And I am grateful to turn to the distinguished gentlelady from the territory of Guam, our ranking member, Congresswoman Madeleine Bordallo, for any remarks she may make.

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

STATEMENT OF HON. MADELEINE Z. BORDALLO, A DELEGATE FROM GUAM, RANKING MEMBER, SUBCOMMITTEE ON READINESS

Ms. BORDALLO. Thank you very much, Mr. Chairman, and good morning to all the fine gentlemen that are here at the hearing today. And thank you for visiting with me so that I could become more acquainted with some of your challenges.

I look forward to hearing about some of the problems that you face as an aviation community and hopefully an understanding on what the services are each doing and how Congress can support efforts to improve aviation readiness across the services.

In 2016, we learned that shortfalls in our service aviation programs existed, from degraded maintenance capabilities to reduced training hours. And we began trying to address these in fiscal year 2017, the NDAA [National Defense Authorization Act]. Just as these conditions developed over time, it will also take time to build back readiness since these issues, of course, did not arise overnight.

What we are continuing to remedy in the fiscal year 2018 NDAA are the consequences of years' worth of high operational tempo, aging airframes, degraded aircraft conditions, fewer experienced air crews, and fewer skilled military and civilian personnel to maintain the aircraft.

The services have responded by identifying the deficits and prioritizing personnel, training, maintenance, infrastructure, and logistic needs. And the committee has tried to support these efforts through budget authorizations and policy initiatives in the fiscal year 2018 NDAA.

However, this committee is keenly aware that these efforts are rendered less effective by the continuing impacts of sequestration and unpredictable funding through continuing resolutions.

When coupled with reductions in skilled personnel at aviation depots, severe challenges in obtaining spare parts for legacy systems, late and unpredictable funding due to multiple continuing resolutions, and the unrelenting operational tempo required by today's complex security environment, it is not surprising that we are dealing with readiness challenges.

So the acquisition of newer aircraft and the modernization of our existing aviation systems may bring some relief to the stress of our high operational tempo. However, we must ensure there is an appropriate balance between rushing to buy new aircraft and ensuring that we continue investing in the operations and the maintenance of the legacy fleet.

Providing more funding may help, but it is not always the answer. And it has become very clear that consistency and predictability in funding is more helpful than increased budgets.

So I welcome this opportunity today to hear from each witness about the challenges that they face in their service to achieve and sustain aviation readiness and how we in Congress may be able to help.

And I yield back, Mr. Chairman.

Mr. WILSON. Thank you, Ranking Member Bordallo.

In connection with today's hearings, I welcome the members of the full committee who are not members of the subcommittee who are or will be attending.

For a unanimous consent request to permit non-committee members' participation, I ask unanimous consent that a member who is not a member of the subcommittee on the Armed Services be allowed to participate in today's hearing after all subcommittee members and then full committee members have an opportunity to ask questions. Is there any objection?

Without objection, such members will be recognized at the appropriate time for 5 minutes.

I would like to welcome all of our members and the distinguished panel of senior aviators present today. This morning we have with us Lieutenant [General] Chris Nowland, United States Air Force Deputy Chief of Staff for Operations, Headquarters United States Air Force; Vice Admiral Mike Shoemaker, the United States Navy, Commander, Naval Air Forces; Lieutenant General Steven Rudder, United States Marine Corps, Deputy Commandant for Aviation; Major General William Gayler, United States Army, U.S. Army Aviation Center of Excellence and Fort Rucker.

General Nowland, we now turn to you for your opening remarks.

STATEMENT OF LT GEN MARK C. NOWLAND, USAF, DEPUTY CHIEF OF STAFF FOR OPERATIONS, HEADQUARTERS, U.S. AIR FORCE

General NOWLAND. Chairman Wilson, Ranking Member Bordallo, and distinguished members of the Readiness Subcommittee, thank you for the opportunity to testify before you today on the state of aviation readiness across the United States Air Force and really this whole committee across the joint force.

As I personally look back on this opportunity, I realize that only a privileged few get the chance to testify in front of our country's lawmakers, people with the power to make a difference. And I am excited that I can be here today to talk about a subject I am very passionate about, regaining full-spectrum readiness for the United States Air Force.

I look forward to discussing with you where we are today, steps we are taking to recover, and areas where you can support in order to regain full-spectrum readiness soonest.

For 70 years, our 70th anniversary this year, the United States Air Force has provided decisive advantage to the warfighter in air, more recently space and cyber domains. Every hour of every day airmen support homeland defense, deter aggression from abroad, and provide a robust and reliable nuclear deterrent.

However, we are quickly approaching an inflection point. Twenty-six years of continuous operations have taken a toll on the force and adversaries are beginning to close the technological gap.

Today, our combat-coded units hover around 50 percent readiness rate to meet global demands, specifically for high-end conflict against near-peer adversaries. In short, the Air Force is too small for what the Nation expects of it.

The Air Force received $5.6 billion in the fiscal year 2017 request for additional appropriation, and we spent it wisely. We were able to fund our top priority effecting readiness—growing the force. The funding allowed us to recruit 4,000 additional Active Duty airmen, which we are using to accelerate readiness recovery by getting our planes back in the air.

We made investments in pilot production to address our most critical shortfall, and we outfitted our battlefield airmen with the latest equipment to make them more lethal.

We upgraded our fleet's targeting capabilities and increased munitions production. Finally, we funded increased levels of accessions, enhanced network security, and repaired infrastructure serving as the backbone for readiness recovery efforts. These investments will arrest our readiness decline in several critical areas. But shortfalls remain in the near term.

The President's budget for fiscal year 2018 lays the foundation to restore readiness and increase joint lethality. But most importantly, an approved budget with stable, predictable funding levels will build the bridge to the future.

Continuing resolutions and a return to the Budget Control Act measures will reverse all the progress we have made to this point. With predictable budgets we can finally set the conditions necessary for the multiyear process of regaining readiness.

Since 1947, the Air Force has relentlessly provided America with unmatched, decisive combat power in times of peace, contingency, and conflict. However, our advantage over potential adversaries is shrinking.

Our Nation requires a ready and lethal air, space, and cyber force now more than ever. America expects it, combatant commanders require it, and with your continued support, the United States Air Force will regain full-spectrum readiness to ensure our warfighters have an asymmetric advantage in any conflict against any foe. Thank you very much.

[The prepared statement of General Nowland can be found in the Appendix on page 28.]

Mr. WILSON. General, thank you very much, and we appreciate your service so much.

And we now proceed to Vice Admiral Shoemaker.

STATEMENT OF VADM TROY M. SHOEMAKER, USN, COMMANDER, NAVAL AIR FORCES, U.S. NAVY

Admiral SHOEMAKER. Good morning, Chairman Wilson, Ranking Member Bordallo, and distinguished members of the subcommittee. I am honored to be here along with my fellow senior aviators to update you on the state of naval aviation readiness.

In the next few minutes I will reinforce what I know will be a consistent theme from the four of us and was already echoed in the chairman's and ranking member's opening statements.

As we talk about readiness and what it will take to dig out of the hole we are in, we appreciate your support in making our aviation forces whole again and putting us on a better path to support SECDEF's [Secretary of Defense's] mandate to increase lethality and remain ahead of peer competitors around the world.

In my written testimony I mention Lemoore, California, our West Coast master jet base, as a microcosm for our broader readiness challenges. And I would like to use our recent West Coast carrier deployments as a call to action.

We are meeting the combatant commanders' requirements for ready, lethal carriers and air wings forward, but at a tremendous cost to the readiness of our forces at home.

For example, to get *Carl Vinson, Nimitz* and *Theodore Roosevelt* ready to deploy in January, June, and October of this year, and equip their embarked air wings with the required number of mission-capable jets, 94 strike fighters had to be transferred to and from the maintenance depots or between F–18 squadrons on both coasts.

This included pulling aircraft from the fleet replacement squadrons, where our focus should be on training new aviators. That strike fighter inventory management, or shell game, leaves non-deployed squadrons well below the number of jets required to keep aviators proficient and progressing toward their career qualifications and milestones, with detrimental impacts to both retention and future experience levels.

Additionally, to get those air wings ready, several hundred parts had to be cannibalized from other Super Hornets across the force, further decimating the readiness of squadrons and adding significantly and unnecessarily to the workload of our maintainers.

From a manning perspective, to fill gaps in those deploying squadrons and the 3 carriers, over 300 sailors had to be temporarily reassigned from other squadrons, have their orders changed or get extended beyond their normal sea tour lengths, which hurts our sailors and their families and has cascading effects on enlisted retention across the force.

So what can we do to help improve readiness and quality of service? First, consistent, predictable funding that we can execute on 1 October is absolutely required.

Then we must buy back the readiness we have lost from years of resource-constrained budgets. Some of it can't be recovered. It is corporate memory, like foundational flying experiences that we no longer have in a generation of pilots.

Other readiness shortfalls, like the diminished stock of parts on our carriers and at our bases must be replenished. Pressurized budgets have forced us to make difficult tradeoffs to sustain the readiness of the current force, modernize that force to pace the threat, procure new aircraft with high-end capabilities and increased lethality, and add the critical manpower needed to operate and fight those forces and win, as our Nation expects us to do.

My job as the Navy's air boss is to work as hard as I can to give our commanders the resources they need to focus on warfighting first, be ready to operate forward, and be successful when we ask them to sail or fly in harm's way. I hope I can count on your support to deliver that commitment.

In closing, although we are carefully managing risks at home, I couldn't be more proud of the way our incredible aviators and sailors are performing with quiet professionalism and excellence at sea and ashore around the world today. Their service is making a difference for our Nation and we must do all we can to keep them ready.

Thank you for the opportunity to be here today, and I look forward to your questions.

[The prepared statement of Admiral Shoemaker can be found in the Appendix on page 35.]

Mr. WILSON. Thank you very much, Admiral. We appreciate so much your service.

General Rudder.

STATEMENT OF LTGEN STEVEN R. RUDDER, USMC, DEPUTY COMMANDANT FOR AVIATION, U.S. MARINE CORPS

General RUDDER. Chairman Wilson, Ranking Member Bordallo, distinguished members of the House Armed Services Subcommittee on Readiness and other distinguished members, I appreciate the opportunity to testify on the current state of Marine Corps aviation readiness.

I would be remiss if I didn't wish everybody in the room a happy Marine Corps birthday. The Marine Corps continues to be the Nation's expeditionary force in readiness, and Marine Aviation is prepared to surge and fight anywhere you ask them to.

As Deputy Commandant for Aviation, my focus is building readiness for combat. It is and it will continue to be my top priority. As we build readiness for combat, we will also balance modernizing the force, as well as fully investing in our maintenance base.

We watch our ops [operations] tempo very carefully, and today we have multiple aviation units engaged around the globe. There are F–18s flying combat missions from the land, from aboard Navy aircraft carriers, and operating throughout Asia.

Our V–22s stand ready for combat support of AFRICOM [U.S. Africa Command], CENTCOM [U.S. Central Command], and we have aviation combat elements operating on amphibious shipping throughout the world. We are also dedicated to helping our fellow Americans in time of need in support of disaster relief operations.

This is in addition to our standing deployments and forward posture in the Pacific, where we currently stand ready to support our five allies and multiple partners.

Since last year as our deployment-to-dwell has improved slightly from an average of 1:2 to 1:2.6, this means that last year and years prior we had marines deployed for 6 months, but they only had 12 months at home to get ready to deploy again.

This year we are able to keep marines home for approximately 15 months, so they are able to gain about another 3 months of readiness time. Again, minor improvements, still short of our target, which would be 6 months deployed and 18 months at home to prepare for the next deployment.

Thank you for your support for additional funds we received in fiscal year 2017. We have made moderate gains in readiness but still not where we want to be. Our readiness recovery strategy is built upon sustaining our legacy fleet while modernizing new aircraft, investing in our marines, and balancing funding into fully funding our readiness accounts.

We are 43 percent complete with our transition of every squadron in the Marine Corps. In the past year, Marine Aviation has improved readiness by roughly 15 percent in our modern fleet and 10 percent in our legacy fleet.

We are slowly adding aircraft to our flight line. However, we are still about 115 aircraft or about 20 percent short of where we want to be.

On average, hours per crew each month increased by almost 2 hours this year. In 2016 we were flying at 13.5 hours, roughly aver-

aging per pilot. This year we are 15.4. Not where we want to be at 16.9, but a slight improvement nonetheless.

A key part of our readiness recovery is focusing on our marines. We are investing in our maintenance marines who make it all possible. Last year we identified experience gap at some of our maintenance supervisory levers.

Through an update to our MOS [military occupational specialty] manual, we are now tracking prioritized, advanced qualifications essential to those positions. Tracking these marines within squadrons ensures we keep the right maintainer in the right squadron at the right place.

To further reduce the experience gap, we are offering an aircraft maintainer retention bonus to qualified marines that have those higher designations. Maintainers who accept the bonus remain in the squadron flight line for 2 years supervising and growing the next generation.

To date we have about 350 marines that qualify for this and about 130 have accepted. So that is 130 marines distributed throughout the Marine Corps that are actually going to stay—experienced marines that are going to stay in the squadron working on airplanes.

Also this year for the first time since 2011, we are giving a pilot retention bonus.

So now that we are adjusting our critical maintenance manpower we must invest in supply and depot throughput to support them. Our maintainers do not have enough parts on the shelves to sustain aircraft in the flight line. With Congress' help in 2017, again, we funded spares to maximum executable levels.

In the 2018 budget request that is sitting over here, we have again funded to unprecedented levels. In the past, in some cases we have funded 25 percent where we are supposed to be; this year, between the Navy and Marine Corps, funding at full levels. We plan to continue this through the FYDP [Future Years Defense Plan] for both our legacy as well as our new airplanes.

Supply depot improvements allowed us to return 30 Marine F–18s to the flight line this year from the depot and reset 13 long-term-down CH–53s. That may not seem like a lot, but out of those 13 airplanes came out we have flown over 2,000 hours in those airplanes. The 53s their hours have increased more than any other community in this past year.

Finally, I would like to take this opportunity to briefly address aviation mishaps. It is our commitment that every time we operate an aircraft that it is certified safe for flight and ready for the demands we place on it.

Historically, our mishap rates have been flat, but there was an increase in fiscal year 2017. And while there is no direct link between low readiness rates and high Class A mishaps this year, it has my fullest attention. There is no question—no question that naval aviation is an inherently demanding discipline, and we cannot discount second- and third-order affects of low readiness and lack of training reps.

Human factors and the pressure to be ready for the next deployment comes into play daily. Like any profession, the more you practice your trade the better you are at doing it. The true metric of

health in aviation is aircrew flight hours. While we have increased our average flight hours last year, we are still below what is required.

Ten years ago, a pilot averaged 16 hours per month. Today it is 15.4, but that is only part of it. Three years ago, typically 10 years ago during a 3-year rotation, typically a 3-year rotation, those pilots averaged 20 percent more hours during that 3-years rotation than the pilots are today.

Consider the data and add that to the current operational tempo. That combined with the challenging environments marines operate in, there is a marked difference between being current and being proficient.

Conclusion for me is thank you, again, to this committee for all the help you have done over the years. Marine Aviation, we continue to improve but it is fragile.

We need, as you would imagine, stable, predictable funding over time, and we need your help as you have in the past to fund those readiness enabler accounts and flight air programs to sustain the current slight upward tick in readiness.

Recovery of readiness also means transitioning in new aircraft like the F–35 and the CH–53K as fast as possible in a fiscally responsible manner. Simultaneously, we are working hard to sustain, as you appropriately put out, our legacy aircraft.

Mr. Chairman, distinguished committee members, we look forward—the Marine Corps appreciates everything you have done. We look forward to taking your question.

[The prepared statement of General Rudder can be found in the Appendix on page 47.]

Mr. WILSON. Thank you very much, General, and indeed, happy 242nd birthday to the U.S. Marine Corps tomorrow.

And we now proceed with General Gayler.

STATEMENT OF MG WILLIAM K. GAYLER, USA, COMMANDING GENERAL, U.S. ARMY AVIATION CENTER OF EXCELLENCE AND FORT RUCKER, U.S. ARMY

General GAYLER. Chairman Wilson, Ranking Member Bordallo, and distinguished members of the Readiness Subcommittee, thank you for the opportunity to appear before you today and address Army Aviation readiness.

I am grateful to represent the Army leadership and the military and the civilian professionals and the courageous men and women of Army Aviation who steadfastly serve our Nation each day.

Army Aviation has provided an unparalleled advantage to our Nation as a fundamental element of the joint force, and there is no doubt that aviation will remain an essential element of any combat in the future. However, force structure reductions, increased global requirements, funding uncertainty, and the requirement to train our forces to a higher level of preparedness raise concerns about the overall future readiness of Army Aviation.

Aviation training is tough under any circumstances, however, to date, we assess that the fiscal environment, coupled with any atrophied maintenance skills or flight hours unexecuted have not manifested themselves as a result in aviation mishaps, which in fiscal

year 2017 remained below the both 5- and 10-year averages. However, we watch them very closely and are still concerned.

If current trends do continue however, particularly with reduced flight hour execution or funding and combined with a requirement to enter into a high threat environment, historically we do see a rise in aviation mishaps.

However, the current fiscal environment and high demand for aviation do pose those challenges. Today's units are resourced to the platoon level proficiency, which is sufficient for the counterinsurgency operations that we have been in in the last decade and a half.

However, to fight and win in increasingly complex environments against a more capable near-peer or a peer enemy, aviation units would be needed to be at a higher level of proficiency at higher echelons.

As turbulence within aviation subsides we will ask for your continued support to assure sufficient resourcing to achieve that readiness.

Readiness also has an equipping component. Aviation initiatives to sustain readiness and to meet global requirements have come at a cost to our modernization. Budget-driven force structure reductions and the current fiscal environment have significantly reduced our budget over the past 6 years and tests our ability to modernize our force and close key capability gaps with potential adversaries.

In the near term, Army Aviation is working tirelessly to develop capabilities to ensure that we maintain a competitive advantage over any potential adversary. And in the midterm we must make very difficult decisions about our legacy fleet and about the future of vertical lift to ensure that we provide capability to ground commanders that they will need to fight and win on the future battlefield.

The United States Army still retains the most modern and best-trained aviation force of its kind in the world, and our soldiers, noncommissioned officers, and our officers continue to serve this Nation faithfully.

Army Aviation remains ready to meet any future challenge, no matter the complexity or the risk. Certainly stable, adequate, and predictable funding would enable us to transform into that more capable, lethal, and prepared force for the future.

I thank each of you for your continued support to the outstanding men and women in uniform. And I appreciate the opportunity to testify today and equally look forward to your questions. Thank you.

[The prepared statement of General Gayler can be found in the Appendix on page 58.]

Mr. WILSON. Thank you very much, General Gayler, and we appreciate your first appearance before this subcommittee, and best wishes on your continued success.

And beginning with General Nowland, a question I have for each person on the subcommittee will have 5 minutes, strictly maintained by Ms. Dean. And so we will proceed.

The latest projections for rebuilding readiness are based on setting the conditions for readiness recovery. Could you please provide examples of the fragility of the recovery efforts, how fiscal year

2017 funding has shown results in recovering readiness, and how the fiscal year 2018 will further readiness recovery? Where are additional resources still required?

General NOWLAND. Mr. Chairman, thank you for that great question. The 2017 RAA [request for additional appropriations] really helped the Air Force. We increased our spending in our flying hour program. We increased our spending in our weapons systems sustainment.

We increased critical skills availability through people, through buying 4,000 more airmen that we could then put into it, and then the training resources, our ranges and simulators. We also increased spending in those areas.

So those levers continue to move forward. The 2018 budget right now, if enacted, once we get the budget will be good for us. The Presidential budget continues to move it.

The analogy that I would make is we have to grow the force. So along those paths, we still have areas of risk. We have a pilot-aircrew crisis. Our most highly stressed career field right now is AC–130 gunners. So it is just not a pilot crisis, but the pilots are our most critical shortage so we will continue to work through that.

Our maintainers, we will continue to work to train our maintainers, to experience them so that they can go from three level to five level to seven level, which is from technician to apprentice to expert. And it takes a while to grow that force.

Continued budgetary support will allow us to continue to close out in fiscal year 2019 and finish our maintenance and fill up our maintenance holes where we have there.

Weapons systems sustainment, as we talked about just like the other flags told you, we have challenges. For the most part, our weapons systems sustainment is good.

We are funded at 90 percent with a combination of base budget and OCO [overseas contingency operations], but we still need to improve, as you and I talked about, the delivery mechanism, the logistics is the key. How do we get our parts to the far-flung small fleets, such as RC–135s out at Kadena Air Base?

Those would be the areas that the continued budget pressure will allow us to continue to move forward with, Mr. Chairman.

Mr. WILSON. Thank you very much. And Admiral.

Admiral SHOEMAKER. Thank you, Mr. Chairman. As we look at—I think I will refer to Ranking Member Bordallo's comments in the beginning when she said we didn't get here overnight. It is gonna take some time to dig out of the readiness hole that we are in.

As I look at fiscal year 2017, that was with the request for additional appropriations, that was a relatively good year for us in naval aviation in terms of the flying hour account and our readiness enabler accounts. But again, it was two-thirds of the year our hands were tied a bit while we were still under the continuing resolution.

In fiscal year 2018 both our flying hour account or our flying hour account and every one of our enabler accounts is plussed-up to levels beyond where it was in fiscal year 2017. That is goodness.

The one area I would continue to focus, and I mentioned it in my opening comments, is in the spares, the APN–6 accounts, a critical enabler for us to continue recovering readiness.

So the fragility you referenced, Mr. Chairman, I think we just have to have the continued sustained funding over time to get us out of the hole we have dug.

Mr. WILSON. Thank you very much, Admiral. And General Rudder.

General RUDDER. Yes, thank you, Mr. Chairman. We have, similar with our partners within the naval aviation enterprise, have fully funded a lot of our accounts to our executable levels. And to give you an idea what that looks like, you know, in fiscal year 2016 for spares we are at 83 percent.

For fiscal year 2017, with the additional money you gave us, we were able to get to 94, and with the budget that we have in now we are going to fund it at 96.

Now, you know, predictable budget is always good because that allows our program managers to put those spares on contract. So the quicker we get the full budget, the quicker we can get those spares on contract.

Some of the fragility of it is that as our ops tempo has not decreased, we must, one, balance our pilot production, which we are doing, and balancing our aircraft.

And as an example, with our F–18 community, probably 2 or 3 years ago, you know, we might have had five or six F–18s in the flight line, maybe 3 months before they were getting ready to deploy. And then we pull aircraft from the flight line, inject them into the squadron and deploy them.

We reduced our squadron deployments down to 10 aircraft as a flight line entitlement. And recently to see some of the progress, although fragile, we deployed VMFA–251 into Asia with 12 aircraft, and they are doing quite well with 10 out of 12 up on a regular basis.

So there is some progress being made. Fully funding those accounts has been the key to success. Thank you.

Mr. WILSON. And thank you very much.

And General Gayler, you are finding out your first time here that time can be cut off, but for the record, we will give you that question and look forward to your response.

But so that all of the members of the subcommittee can participate, we will proceed with Congresswoman Bordallo.

Ms. BORDALLO. Thank you very much, Mr. Chairman.

General Nowland and Admiral Shoemaker, both the Air Force and the Navy have identified manpower shortfalls in the maintenance communities. Now, without a sufficient number of trained and experienced maintainers, you will have challenges generating ready aircraft to support pilot training and operations.

So can you describe the actions that you are taking to address manpower shortfalls in the maintenance community? And assuming stable funding and how long will it take to fill these gaps? Do we see any of it presently or is it still in the future?

General NOWLAND. Yes, ma'am. We are experiencing those problems. As I said, in our maintenance field we are growing 4,000 maintainers in 2017 is what we are doing, and we expect to close out in 2019 to continue to fill those gaps.

The other thing we are doing is we are moving maintainers where we can into combat-coded units. So for instance, as we stand

up F–35 units, our training units, we are using contract solutions so that we can move our maintainers into the combat-coded units. Then as we grow our maintenance and fill our maintenance manning, we will then come back and put blue-suit maintenance back into those organizations.

But as they said, it takes a while to grow that capability to a three to a five to a seven level, ma'am.

Ms. BORDALLO. All right. Thank you. And also to you, Admiral Shoemaker?

Admiral SHOEMAKER. Thank you, ma'am. So I think in the aviation ranks, at least in our overall accession program, in 2017 we increased those accessions 32,000 to 35,200. That will take a while to get to the fleet.

We are living off, I think the largesse of a fiscal year 2013, a very good recruiting year. Those sailors are all now getting to the end of their initial tours and choosing to taking shore duty or choosing to separate.

A couple things we have done to increase the experience level and the level of the maintainers in our fleet squadrons is a couple policy adjustments.

One were contract extensions that we offered for sailors on sea duty. We had almost 1,000 take that for almost over a year each. So that is about 1,000 years of sea duty that we increased there.

The other one was an extension to the high year tenure gates, the changes to the high year tenure gates. That also added about 1,000 years of sea duty into our squadrons.

As best we can, we are also trying to recycle and reutilize aviation experience in the same type/model/series. So we avoid the training requirements and costs as they show up and transfer between squadrons. That is an initiative that is getting traction in Millington in our Personnel Command.

The last one is I know in our fiscal year 2018 budget, our request is for additional accessions, and I think that will help us. It may take a little while to get to the fleet, but we will continue to work those policies in the meantime.

Ms. BORDALLO. Well, thank you very much. And my last question is to General Gayler. Can you share, General, with the committee how recommendations from the Holistic Aviation Assessment Task Force, which is directed by General Milley, has improved Army readiness?

And can you highlight some of the recommendations that have been implemented or that you plan to implement in fiscal year 2018 and how they will produce measurable readiness improvements?

General GAYLER. Yes, ma'am, thank you very much for the question. So of course, General Milley tasked Lieutenant General Mangum to conduct a holistic aviation task force assessment. He came up with 63 recommendations, of which 30 of them are completed to date and/or have a plan of action to complete. The remainder will be completed by the end of fiscal year 2018.

Most significantly, really, are in the areas of doctrine development where we have to align our doctrine to better stay linked with a potential future battlefield and with the greater Army.

Also in training we have made great strides in adjusting training to bring our forces to a higher level of collective training, which would be necessary on a future modern battlefield, to include UAS integration, unmanned aerial systems integration, and teaming with manned systems.

Really a third area that is most significant is in the maintainer arena. We have some atrophied skills as a result of a few events in the past few years.

So we are focusing very heavily on standardizing a maintainer training program, not only to get all maintainers to the requisite standard, but also to help further, kind of increase their maintenance knowledge. Certainly when they achieve a higher rank they would need that certain higher level of knowledge.

So it has been very effective for us, and we look forward to completing it.

Ms. BORDALLO. Thank you very much, General. And I yield back, Mr. Chairman.

Mr. WILSON. Thank you, Congresswoman Bordallo.

And now we proceed to Congressman Austin Scott of Georgia.

Mr. SCOTT. Thank you, Mr. Chairman.

General Nowland, good to see you again. I talked with you a little bit about Moody Air Force Base and the A–29 Super Tucano training program, began there in 2015 with the Afghan Air Force, and I know it is been extended to 2020. Now we are training the Lebanese Air Force in a similar program.

Can you explain how this program works within the overall strategy of the Air Force?

General NOWLAND. Congressman Scott, great question, thank you, sir. This has been a model program, and this is in line with the Secretary of Defense guidance that our National Military Strategy is in, with, and through coalition partners and allies.

So the Afghan A–29 program has been successful because what we have done is we have worked with our government to acquire those airplanes and the transfer those airplanes to the Afghan Air Force.

Simultaneously, we brought Active Duty, Reserve, and Guard members in to train with the Afghan pilots to get them up to speed. And then we have supplemented them once they go into Afghanistan with air advisors who are with them taking them through their combat missions. We have seen it to be very effective in helping to train the Afghan Air Force.

The Lebanese program is initiated right now. We have also done some work with the Lebanese Air Force to help them with facilities in Lebanon, and we are moving forward along the same model. Our chief believes this is a model of success for the future. We will try to continue to build on it.

Mr. SCOTT. Okay. I agree with you. I mean, the coalition partners, the more assets that we can give them the better off we are gonna be. And some have asked how this actually helps with U.S. Air Force pilot training and the readiness for that. And could you hit on the point of how it decreases pressure on U.S. pilot capacity to carry out the sorties in these other countries?

General NOWLAND. Well, great question again. So for instance in Afghanistan, if we have limited capability as we look across the re-

gion, and if we have an Afghan Air Force that can talk to the kandak down to the battalion level and do that close air support, that doesn't require F–16s overhead or an MQ–9 Reaper overhead. So therefore it is enabling them to be successful.

We are also training their joint tactical air controllers so that they can control it so it becomes organic to the Afghan Air Force, which reduces the demand on our joint force.

Mr. SCOTT. Thank you, General. You know, I have to mention the JSTARS [Joint Surveillance Target Attack Radar System] and the C2ISR [command and control, intelligence, surveillance, and reconnaissance] capabilities. We have all heard that we don't have enough of that capacity, and I just look forward to proceeding with the JSTARS recapitalization and certainly appreciate any support that any of you can give with us in filling that gap.

General Gayler, graduate from North Georgia Military, I believe? Is that correct? The delayed risk in infrastructure has increasingly degraded aviation readiness.

Last year, I had concerns about the aging maintenance hangars and support combat aviation units. We received the Army combat aviation hangar sustainment report, which detailed the get-well plan. Are we on track to meet the 80 percent adequate facilities rating no later than 2025?

General GAYLER. Sir, it certainly depends on levels of funding between now and 2025. We currently have nine Active Duty installations that have infrastructure needs that we rate as significant.

And even above hangar facilities we have facility requirements for the prevention of corrosion on repair parts. In fiscal year 2016 we lost $16.2 million worth of repair parts just to corrosion alone.

And so we are working that very hard to get a steady funding stream and priority to that infrastructure repair in all the installations, but also specifically for that corrosion prevention, which was another holistic task force review. And but we do have a lot of work left to do, sir.

Mr. SCOTT. General, I have just a few seconds left, but specifically with regard to Hunter Army Airfield, can you update us on the hangar repairs there?

General GAYLER. I believe I can. We did have one hangar that was approved for improvement work beginning in 2022 to be complete by fiscal year 2024. The general support aviation battalion hangar that is part of that complex is the number one priority on FORSCOM's [United States Army Forces Command's] military construction priority list. So we are making some progress.

Mr. SCOTT. Thank you, General. Gentlemen, thank you for your service. And I yield the remainder of my time, Mr. Chairman.

Mr. WILSON. Thank you, Congressman Scott.

Mr. SCOTT. Thank you.

Mr. WILSON. We now proceed to Congressman Anthony Brown of Maryland.

Mr. BROWN. Thank you, Mr. Chairman. Let me start by saying that recently I visited with the 10th Combat Aviation Brigade from 10th Mountain in Powidz, Poland, and what those young men and women are doing is phenomenal.

They are working interoperability issues with their counterparts. They are understanding the terrain. And I think they are really

laying the groundwork for an enduring rotational, although one day I would like to see a permanent presence of Army Aviation in Europe.

Doing a great job with the UH–60 and the AH–64. I graduated flight school in 1985. The Black Hawk had already been in the field for 6 years, and we were anticipating a year later the arrival of the AH–64.

By 2030, the Black Hawk will have been in the field for 50 years and the Apache for 45. I am sure we will be looking at those airframes with the same endearing love and affection as today we look at the UH–1, which was the workhorse of Vietnam.

So my concern is, and my question, General Gayler, is the need to shift or at least broaden our focus from what today is, you know, short-term readiness to what needs to be more on the modernization of the force.

We haven't heard much, I think, during this Congress, or at least I haven't been in hearings where I have heard much about the Future Vertical Lift program. Can you talk to us a little bit about that replacing the aging helicopter fleet?

I understand production will start in 2030. And what are the impacts to Army Aviation modernization plans and programs under the current level of funding?

General GAYLER. So thank you, Congressman. First, in reverse, the current level of funding, we are certainly based on force structure that we now have as a result of budget realities, we are absolutely strapped to meet demand while simultaneously training for major combat operations at a higher level of readiness and then while balancing modernization.

So it has kind of forced the Chief of Staff of the Army to prioritize readiness as the number one priority. So we will continue to ensure that we have ready forces now to meet the demand and for the future.

You are correct. We have lost some modernization spending power over the next coming years. And we do have to make serious choices to invest in that capability.

Where we have been left so far at the funding levels is incremental modernization. And there is a unique linkage between incremental modernization and readiness.

In order to incrementally modernize our fleets, for example the AH–64s, we have to take existing airframes out of operational units to induct them into a remanufacture line to improve that airframe.

That impacts readiness because we are taking aircraft from operational units on which they should be training. On average, across a 24-ship AH–64 battalion in authorization today, we average between 20 and 21 aircraft in the field because we are forced to incrementally modernize.

We do have to change that. And the Future Vertical Lift program is looking at technologies right now that send a joint multi-role tech demonstrator that will conclude in fiscal year 2019. That will inform what technologies are feasible to meet a capability requirement that we have on a future battlefield.

And then we will aggressively pursue those capabilities as we move forward because we do have to maintain the legacy fleet via-

bility though, because, as you stated, sir, I mean, these Apaches and these Black Hawks will be in our force for a long period of time. And we have to keep them viable.

That is why other parts of modernization are critical to us, the Improved Turbine Engine Program to buy back power in those airframes, both the Apache and the Black Hawk, are critical.

Now, if we have any CRs [continuing resolutions], that overall hurts our ability to work development efforts.

Mr. BROWN. And let me just——

General GAYLER. Yes, sir.

Mr. BROWN [continuing]. Take back my time, reclaim my time. Thank you very much. I am concerned about the increasing standoff that our forces are now facing, will be facing, and we need to make sure that we are improving both the lethality as well as the reach of our aviation assets.

The next question, which I would expect I would get a response in writing because I am going to ask a question and I don't think with my time remaining you will be able to answer it, General Nowland.

And it is a parochial question. I am in the Fourth Congressional District of Maryland. Joint Base Andrews is in my backyard.

I am concerned about the replacement program, the Huey replacement program, and if you could give this committee assurances that the program will not face further delays and that it is on track for award in third quarter of 2018? And if not, why not and when?

It is an old fleet. The Huey—surprised that some of them are still in operation—they are having difficulty performing their continuity operations, other base missions at Andrews. So if you could just give us an update on that program back through the committee staff or however that is most appropriate, Mr. Chairman.

Mr. WILSON. And thank you very much, Congressman Brown.

And we now proceed to Congressman Steve Russell of Oklahoma.

Mr. RUSSELL. Thank you, Mr. Chairman, and thank you generals for being here today. I guess my question would really be for all of you. With respect to flight hours, and General Rudder, thank you for talking about last year and this year, but could you give us just a brief thumbnail trend of what the average flight hours are currently per month for your pilots?

General NOWLAND. Congressman Russell, across the United States Air Force our flight hours per month are going in the right direction. We are increasing them. Across the multiple different series that I have——

Mr. RUSSELL. Well, I know there are a lot of different airframes, but yes.

General NOWLAND. It is hard. So but in our fighter community, trying to keep it apples-to-apples, we are averaging about 15.6 in our air superiority and right around 16 or so in our general purpose attack.

Mr. RUSSELL. Okay.

General NOWLAND. And that really goes back to our readiness aircrew program, which ties simulators and flight hours together for their training.

Mr. RUSSELL. Interesting. Okay, thank you. Admiral Shoemaker.

Admiral SHOEMAKER. Yes, sir. So I would say we are very close to that in aggregate across all type/model/series. The strike fighter community is a couple hours below. So about 15 and a half across in aggregate and maybe a couple hours below that for VFA [strike fighter squadron].

In just general trends if I look over time for the annual amount of hours, our TACAIR [tactical aircraft] communities have come down from around 250 a year to about right around 190. So that is a drop from 2011 to 2017.

Big wing, the MPRA [maritime patrol and reconnaissance aircraft], E–6s and P–8s are all have been fairly steady, same in our rotary force. So the trend is down on our TACAIR community.

Mr. RUSSELL. Okay. Thank you. General Rudder.

General RUDDER. Yes, thank you, Congressman. It is for our TACAIR community they are coming up. So for our F–18 community they are hovering around 12.7, not certainly at the 15-hour.

Now, that is by the nature we do calculations, we take off one of our deployed squadrons over there. They are averaging from 40 to 50 hours per pilot——

Mr. RUSSELL. Sure——

General RUDDER [continuing]. A month.

Mr. RUSSELL. Operational deployment goes up.

General RUDDER. Because there is just—but when you average in a squadron that maybe just returned it is kind of getting themselves backed up on maintenance step. So we are still shooting towards 15. As talked about throughout the Marine Corps it is 15.4.

We still want to get up to 16.5 hours, but there are a couple really glimmers of hope out there. And certainly with the CH–53, you know, our heavy lift community, they went from 9 to 13 this past year. So that was a big step.

Mr. RUSSELL. Better.

General RUDDER. Yes. Thank you.

Mr. RUSSELL. Thank you.

General GAYLER. Sir, for the Active Component it is 10.8 hours currently. For our National Guard it is around 6.4 and 7.8 for the Reserve Component. What we try to achieve is 14.5 hours per month per crew to reach a collective readiness level at the battalion level.

We could achieve that in our UH and CH–47 fleets. The AH–64 fleet is somewhat capacity limited because of shortages of the airframes and some of the pilots. Thank you.

Mr. RUSSELL. Thank you. And the other question I have is on pilot retention and pilot generation. I know there was a lot of hoopla made about maybe bringing retirees in, but really this authority was always available as I understand it to the services to recall folks that were retired if they needed to.

Do you see an age gap developing because of accessions of new pilots and then trying to retain with incentives and other programs? If y'all could speak to that in the time I have remaining?

General NOWLAND. Congressman Russell, we just received greater authorization to do it for a longer period of time. So we will be looking at that. I don't anticipate necessarily an age gap. The retirees we intend to bring back, number one, we will try to fill staff positions——

Mr. RUSSELL. Sure. Training——

General NOWLAND [continuing]. Which would then allow our——

Mr. RUSSELL [continuing]. Training base maybe also or?

General NOWLAND. Yes, sir. And then at training bases, in which case when you look at your instructor pilot they all look old to you, so, you know.

Mr. RUSSELL. Yes. Well, and I appreciate that because a lot of times, you know, you have captain instructors, which is not a bad thing. They are current. They are coming from the field. But I was curious on that, so thanks.

Admiral Shoemaker.

Admiral SHOEMAKER. So we heard about the Air Force initiative and actually looking at that in our production world as well, where we are trying to catch back up, certainly in T–45s. Most of you all are familiar with the operational pause we took.

In the general trend across the force, though, I think, you know, other than a couple of targeted communities, be it the F–18 community and our Growler, advanced airborne electronic attack, we are meeting our department head requirements with quality.

Mr. RUSSELL. Thank you. General Rudder.

General RUDDER. As we look across our fleet, we expect about a 7 percent fleetwide departure rate on a yearly basis.

Now, for our TACAIR community, much like Shoe just said, you know, we are up around 9.5, 9.9, with the average over the year about 9. So we have seen about a 1 percent, 1½ percent increase in this departure.

So we are approaching it from all angles. We are approaching it from our ops tempo, readiness. As you would imagine, pilots want to fly. And when they are not flying they are not happy so we are trying to increase the readiness out there. And again, we are trying to give incentives to keep people in.

But it is a concern. Obviously, when the economy is doing good, airlines are doing good, I think to include all the helicopter guys and gals out there, they are being approached on a daily and regular basis because there is other shortfalls out there with our airline partners.

Mr. RUSSELL. And Mr. Chairman, if I may with indulgence, I hate to leave my Army brother, you know, hanging in the wind. If he could answer that with your indulgence? Thank you, Mr. Chairman.

Mr. WILSON. Please proceed.

General GAYLER. Thank you, sir, and I will be brief. Yes, sir. We have targeted specifically some of the more senior qualifications to remain in the operational fleet and we use heavily some Department of Army civilian-aged experienced in the institutions. So we watch it carefully.

Mr. RUSSELL. Thank you very much. Thank you, Mr. Chairman.

Mr. WILSON. And thank you, Congressman Russell.

We now proceed to Congressman Don McEachin of Virginia.

Mr. MCEACHIN. Thank you, Mr. Chairman. And thank you all for being here.

General Nowland, would you be kind enough to discuss the intent behind the Air Force enterprise range plan [ERP], the poten-

tial benefits of the regional training range approach and what the Air Force hopes to achieve as the ERP process is completed?

General NOWLAND. Congressman, great question, I would love to. We believe that the enterprise range plan will make us more efficient. So what we need to do is we need to look at our ranges holistically. Our ranges are national treasures, and so we have got to look.

Right now the way we command and control them we don't create as many efficiencies as we think we can. So we believe by creating an enterprise range plan and pooling it together regionally we will be better coordinators with our sister services as we look at how we can possibly expand the ranges and increase investment also in our ranges.

We have limited investment dollars. Where do we put the high-end simulators, into which ranges so we get the maximum training value out of every sortie we fly?

Mr. MCEACHIN. Thank you. And that is a nice segue into my next question to Admiral Shoemaker and General Rudder. Can you discuss the potential benefits to your services of the Air Force consolidating its six regional training ranges? Is there a potential to better leverage these ranges to improve training across all services?

And can you also discuss the challenges each of your services face in acquiring technologies like threat emitters that allow your respective service air components to simulate advanced threats?

Admiral SHOEMAKER. Yes, sir, thank you very much. As we merge the enterprise plan that General Nowland just described, our premier training range is obviously Fallon, Nevada.

And as we introduce new technologies, we are clearly figuring out that the airspace limits and the electromagnetic spectrum limits are not allowing us to fly our new platforms to their full capabilities.

So it is driving us into a virtual and constructive world and we have—moving out with that with a couple of key facilities in Fallon right now that will link to all of our fleet concentration areas, but certainly tie into our Air Force counterparts.

As I talk about Fallon, one of the things we do, we do require, and you mentioned this, sir, were emitters. And the ranges out there are working with some very dated systems.

So when we bring on our new electronic attack airplanes and certainly the F–35 to be able to practice and train against something more representative of the threats we might see is essential.

Mr. MCEACHIN. Thank you. General.

General RUDDER. Yes, thank you, Congressman. I would make as a general statement, our ranges in our airspace that we are able to operate in on a regular basis should be considered a national treasure.

And anytime that we can increase the efficiency we should produce that and protect what we have and when able, when it makes sense, expand airspace, even with the crowded airways as we know them today.

There are challenges. We are fortunate to be able to participate in great exercises like Northern Edge and Red Flag and operate out of Fallon so we—or China Lake or other areas around where

we can take advantage of their first-rate threat systems that allow us to train at levels we need to train.

And with the F–35 coming onboard on larger numbers, we will be challenged in the future to make sure that we have the amount of airspace to be able to train with that airplane, no doubt about it.

And we have got to get very progressive on how we think about airspace and how we fight this airplane and how we fight the network within our range areas because there are competing, you know, communication bands out there we need to deal with and computing airspace requirements.

So I would echo with all my counterparts here that range space is critical, and the more we think through this and make our ranges more complex and more progressive, it will help the joint force all the way around.

Mr. MCEACHIN. I thank each of you. Mr. Chairman, I yield back.

Mr. WILSON. Thank you very much, Congressman McEachin.

We now proceed to Congressman Salud Carbajal of California.

Mr. CARBAJAL. Thank you, Mr. Chairman, and thank you to all the witnesses here today.

Marine pilots remain short on average about one-third of their required flight hours. One-third of the Army's aviation force has been forward deployed at any one time over the past 15 years. The Navy has extended deployments and shortened, eliminated, or deferred aircraft maintenance and training periods.

The Air Force does not have enough experienced maintainers to sustain good quality aircrafts, not enough available mission-capable aircrafts to conduct operations, and airmen and airwomen are meeting the minimum training requirements for their deployment missions.

We are not doing our part to keep our service members safe it seems. We are sending our sons and daughters into theaters of war without fully functioning equipment and inadequate training.

This is unacceptable, obviously. We are willing to spend $1.2 trillion modernizing our nuclear arsenal, and yet we are unable to take care of more imminent essential matters, such as fixing our aircrafts, providing more flight time, time-sensitive training, and modernizing aviation infrastructure.

Are we really prioritizing readiness? Even under current budgetary constraints we should be providing our military with the most effective training, even if it means spending less or just not spending on something else. We can't spend on everything. Training should be a top priority.

To what extent are the services evaluating the effectiveness of training to ensure that completed training meets its expectations for quality?

General NOWLAND. Congressman Carbajal, great question. So for the United States Air Force we have made training a priority. It is a Secretary of Defense, so regaining readiness soonest means rebuilding your operational training infrastructure and funding your training lines.

In the A–3 [Air Staff Operations division] we have stood up a whole training division, operational training infrastructure, led by two-star Major General Scott Smith, whose sole job is to come in

and think about it every day and then advocate and work with our commanders to make sure we can improve our training capability.

Admiral SHOEMAKER. Congressman, I think we have been fairly successful in at least what our CNO [Chief of Naval Operations] has talked about minimizing the extensions to deployments and trying to stay within his 7-month goal. And that has been the case so far, but obviously real world events will play into that.

As we work our air wings and carriers up, we work through the Optimized Fleet Response Plan. And that right now, I think, is a good model for us to take the resources we are given, although we could certainly, as we have talked about earlier, do more as we are working up. But that gives us the ability with the resources given to generate the best capabilities for our forces moving forward.

Now, we are accepting risk on the early parts of that workup cycle, but we make sure that as we get into the more integrated and advanced that we have got the resources they need, airplanes, people and flying hour dollars, ordnance to deliver so that our energies are focused on those next to deploy and on deployment. They are ready. They are certified. They are ready and certified forward.

Mr. CARBAJAL. Thank you.

General RUDDER. Yes, I would echo what Shoe just said. It is the Commandant's priority to just to make sure that when forces go out the door on deployment that they are ready to go. And that may come at an expense of some of the remain-behind forces. That is where we get the challenge of a ready bench behind.

But our forces before they go forward are given the appropriate workup time, and they do get certified before they go out each time.

Back to another point you made, I think where we are trying to balance our readiness challenge is, you know, what we have done in the Marine Corps and I think all the services, we defer buying new airplanes or new stuff, if you will, to pull that money into our readiness account.

So we are balancing both, the really new stuff for the capability we need for the future fight with making sure our readiness is right so when we do send marines and sailors out the door that they have the right gear at the right time at the right readiness level.

General GAYLER. Sir, I would echo that it is a balance certainly to meet demand and train for the future, assess your readiness for both and then to modernize. We take it very seriously.

Certainly every aviator that deploys is incredibly competent to the resource levels that they are trained to and resourced for. And as we look to assess ourselves and know where that risk is, we actually measure our training readiness to a higher battalion level level of readiness called Objective-T so that we can see where we need resourcing and we can see where the risk is.

Mr. CARBAJAL. Thank you. I yield back.

Mr. WILSON. And thank you very much, Congressman Carbajal.

And at this time we will proceed, and that is Admiral Shoemaker and General Rudder, I have a question for the record that I would like for you to get back to the subcommittee.

In February, the Vice Chief of Naval Operations, Admiral Bill Moran, testified that 62 percent of F/A–18 aircraft were out of serv-

ice. Over 50 percent of the out-of-service aircraft were simply awaiting maintenance or parts.

In this committee report accompanying the House National Defense Authorization Act for Fiscal Year 2018 there was express support for an alternative source contract for F/A–18 depot-level maintenance.

Such alternative sourcing ensures competition, best value, and sustainment to be an effective competitive industrial base. We have also encouraged the Navy to meet the contract's maximum authorization within each year of the contract.

What assurances can you provide that the Navy plans to maximize the number of aircraft authorized by the existing alternate source contract for each year going forward and supported by this subcommittee in the NDAA report? What are the Navy's plans to establish a multi-source competitive environment for the F/A–18 depot-level maintenance?

[The information referred to can be found in the Appendix on page 71.]

Mr. WILSON. And again, as we conclude, and it is always a delight to be serving with our Ranking Member, Congresswoman Bordallo.

We want to thank General Nowland, Admiral Shoemaker, General Rudder, General Gayler. Again, congratulations on your first appearance here, for being with us today, and again, happy 242nd birthday. Thank you for your service and thank you for your personnel for your service to our Nation.

And we are adjourned.

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

A P P E N D I X

November 9, 2017

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

NOVEMBER 9, 2017

Opening Statement of Hon. Joe Wilson
Chairman, Subcommittee on Readiness
Hearing on
Aviation Readiness: What's the Flight Plan?
November 9, 2017

A year ago, this subcommittee heard testimony from each of your services about the readiness levels of military aviation. Infrastructure challenges, underfunded spare parts, and depot backlogs were a consistent theme. Aviation readiness challenges do not stop at infrastructure—retention and training of critical skills from trained and experienced pilots to aviation maintenance personnel continues to plague readiness recovery. All of these challenges are competing with no lessening of operational demand in the fight against terrorism and with increasingly aging and over-used aircraft.

Today, I look forward to hearing about each Services aviation readiness, readiness recovery plans, readiness impacts to safety, and where we continue to take risks; calculated in terms of both risk to the force and risk to the mission.

I fully believe that the first responsibility of the national government is to provide for the national security of its citizens—and that is especially true of our sailors, soldiers, airmen and marines; therefore, it is our responsibility as members of this subcommittee to continue to better understand the readiness situation and underlying problems across aviation, and then for us to map a course which best assists in correcting any deficiencies and shortfalls.

I would like to welcome all of our members and the distinguished panel of senior aviators present today.

This morning we have with us:

- Lieutenant General Chris Nowland, United States Air Force, Deputy Chief of Staff for Operations, Headquarters, United States Air Force
- Vice Admiral Mike Shoemaker, United States Navy, Commander, Naval Air Forces
- Lieutenant General Steven Rudder, United States Marine Corps, Deputy Commandant for Aviation
- Major General William Gayler, United States Army, U.S. Army Aviation Center of Excellence and Fort Rucker

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SUBCOMMITTEE ON READINESS

COMMITTEE ON ARMED SERVICES

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: MILITARY AVIATION READINESS AND SAFETY HEARING

STATEMENT OF: LIEUTENANT GENERAL MARK C. NOWLAND

DEPUTY CHIEF OF STAFF FOR OPERATIONS
HEADQUARTERS, U.S. AIR FORCE

NOVEMBER 9, 2017

Introduction

For seventy years, the United States Air Force has provided a decisive advantage to the warfighter in air, space, and cyber. However we are quickly approaching an inflection point. The last twenty six years of continuous operations have taken a toll. Readiness levels are not what they once were and adversaries are beginning to close the gap.

Today's Airmen total 660,000. They go to work each day 24-7-365 to provide homeland defense, deter aggression from abroad and provide a robust, reliable, and survivable nuclear enterprise--the bedrock of our national security. Unfortunately, less than 50% of our force is ready for high-end conflict against a near peer adversary.

We are in need of critical investments to reverse declines made from a quarter century of conflict. These operations have come with a cost, forcing us to spend on the near term instead of investing in the future. Funding from the Fiscal Year 2017 Request for Additional Appropriations is moving us on the right track. With continued, sustained funding the Air Force will transform from where we are today into a more lethal, ready force for the future.

Where We Are Today

The $5.6 billion dollars the Air Force received with the Fiscal Year 2017 Request for Additional Appropriation was spent wisely.

We were able to fund our top readiness priority—people. The funding allowed us 4,000 additional active-duty Airmen, helping accelerate readiness recovery by getting our aircraft back in the air. However it will take five to seven years for these Airmen to become experienced, and we need sustained funding to ensure they receive the necessary training.

Additionally we made investments in pilot production to address our most critical shortfall. New Formal Training Units are getting F-16 pilots their qualification faster. We are accelerating repairs to our aging fleet and increasing stock levels of spare parts through supplemented funding for Weapon Systems Sustainment. For example, $95 million procured initial spares in support of five additional F-35As. These investments provide the logistical foundation necessary to improve aircraft availability and utilization rates. Well maintained aircraft substantially increase training opportunities to regain readiness.

The additional appropriation also provided the funding needed to equip our Battlefield Airman. This equipment decreases the risk of fratricide and lowers the weight of a Battlefield Airmen's kit by 30%. It provides our warfighters on the ground with essential weapons and accessories, communications gear, situational awareness equipment, personal protective equipment, night vision devices, training devices, and explosive detection equipment.

The Air Force upgraded our fleet's targeting capabilities as well as munitions production. $60 million was spent to maximize the production of BLU-117 munitions to replenish stockpiles expended in the fight against ISIS. $144 million was spent to upgrade F-16 Active Electronically Scanned Array radars. Enabling tracking of small asymmetric targets and simultaneous detection and tracking in multiple directions.

Finally, the Air Force funded increased levels of accessions, enhancements to network security, and infrastructure repairs to provide the backbone to stabilize readiness recovery efforts. The investments ensure the Air Force can train, house, and equip increased personnel to perform the work necessary to restore readiness.

What Do We Expect

The Air Force investment in readiness means the service will close gaps in weapon system proficiency, capability, and growth in multi-domain operators, yet shortfalls will remain in the near future.

Fiscal Year 2017 appropriations are arresting our readiness decline. The Fiscal Year 2018 President's Budget lays a foundation for restored readiness and increased Joint lethality. Looking beyond, our future budget requests will build a bridge to the future. It will provide a solid readiness foundation with a strong path toward a pragmatic vision of tomorrow.

Success today and into the future is about our Airmen and their readiness to do what the nation asks. To meet the Joint Force's insatiable demand for airpower the Air Force must grow the end strength of our total force. In addition to growing end strength, investments need to be made in the training infrastructure, to provide the tools to train Airmen to meet sophisticated and technologically advanced threats in air, space and cyberspace, while also increasing funding to weapon system sustainment, to ensure aircraft, weapons and vehicles are available for Airmen to train with and leverage. Investments made in in this year's budgets have to be sustained through the future to ensure Airmen who join today can gain experience and grow their skills. The President's FY 18 budget request, as well as the Air Force's plan for future investments in readiness, will make tangible gains but substantive readiness recovery remains an 8-10 year process after conditions are set.

Steps We're Taking to Solve the Operator Crisis

Twenty six years of combat operations and budget uncertainty, combined with a healthier US economy and airline industry hiring, has created an operator retention problem for the Air Force. This goes beyond just pilots, the Air Force's most stressed career-field are AC-130 gunners. To successfully combat the crisis in operator retention, the Air Force must surge production of operators in air, space and cyberspace, while making fundamental changes that improve quality of life and quality of service for our Airmen. The Air Force is attacking this crisis with the value proposition that Airmen want to do amazing things with amazing people and the latest technology so their lives make a difference.

The Secretary of the Air Force and Chief of Staff are implementing numerous retention initiatives helping with talent management and retaining critical skills across all operator specialties. Examples include: changes to deployment and assignment policies, compensation options, improvements to Air Force computer solutions and increasing manning levels to support high operations tempo while reducing stress on our operators and their families.

Flying Hour Program – Weapon System Sustainment

Consistent, sufficient funding for flying training underpins readiness. However, although our FY 2018 request would provide the maximum executable number of flying hours, the actual number of hours that our pilots are able to train continues to fall short of that needed to sustain full-spectrum readiness. The Air Force's ability to execute at a higher rate is limited by ongoing contingency operations and maintenance manpower shortfalls that constrain sortie generation rates. Therefore, before we increase flying hours, we must fix maintenance manning, and invest in weapons systems sustainment as well as training resources. Without a balanced increase in all three, Airmen will not be able to fly additional hours. Further, without improvements to our infrastructure, our training intensity and relevancy will be insufficient, which will prevent our Airmen from to preparing for full-spectrum, major combat operations.

Training Infrastructure

The final linchpin for regaining full-spectrum readiness includes leveraging current and future funding to change how we train, fundamentally shifting the concept back to an inspection program that ensures commanders are training against realistic threats, and can operate under wartime conditions. The Air Force needs the infrastructure to train at home station and in large-scale, joint, and combined exercises like Red Flag or Green Flag. Realistic training also includes high fidelity air, space and cyber simulators with the ability to conduct virtual and live training simultaneously, with our joint and coalition partners. Most importantly, this integrated synthetic training must be integrated with multi-domain command and control capabilities. This includes virtual replications of environmental conditions on the ground with which we can train Airmen with soldiers, sailors, and Marines.

Conclusion

Since 1947, the Air Force has relentlessly provided America with credible deterrence and decisive combat power in times of peace, crisis, contingencies, and conflict. However, our relative advantage over potential adversaries is shrinking, so we must adapt and change in order to win decisively against any adversary. We owe this to our nation, our joint teammates, our allies, and most importantly our Airmen and their families. Our nation requires lethal and ready air, space, and cyber power now more than ever. America expects it; combatant commanders require it; and with your support, the United States Air Force will regain full-spectrum readiness.

Lieutenant General Mark C. Nowland

Lt. Gen. Mark C. Nowland is the Deputy Chief of Staff for Operations, Headquarters U.S. Air Force, Washington, D.C. He is responsible to the Secretary of the Air Force and the Chief of Staff for formulating policy supporting air, space, cyber, and irregular warfare, counter proliferation, homeland security and weather operations. As the Air Force operations deputy to the Joint Chief of Staff, the general determines operational requirements, capabilities and training necessary to support national security objectives and military strategy.

General Nowland is a 1985 graduate from the U.S. Air Force Academy. He previously commanded at the squadron, wing, and numbered Air Force levels. He also served on the Joint Staff, US SOUTHCOM and two Air Force major command staffs. The general has flown combat operations in support of operations Southern Watch and Iraqi Freedom. He is also a graduate of the School of Advanced Air and Space Studies and was a National Security Fellow at the Olin Institute at Harvard University. Prior to his current assignment, General Nowland was the Commander, 12th Air Force, Air Combat Command, and Commander, Air Forces Southern, U.S. Southern Command, Davis-Monthan Air Force Base, Arizona.

General Nowland is a command pilot with more than 3,600 flying hours, primarily in the A-10, F-15A/C/D, T-37B, T-38A/C A/T-38B and T-6.

EDUCATION

1985 Bachelor of Science degree in electrical engineering, U.S. Air Force Academy, Colorado Springs, Colo.
1990 Squadron Officer School, Maxwell AFB, Ala.
1998 Air Command and Staff College, Maxwell AFB, Ala.
1999 School of Advanced Air and Space Studies, Maxwell AFB, Ala.
1999 Master of Aviation Sciences degree, Embry-Riddle Aeronautical University, Daytona Beach, Fla.
2003 Air War College, by correspondence
2004 John M. Olin Institute for Strategic Studies, Harvard University, Cambridge, Mass.
2008 Air Force Enterprise Leadership Seminar, Kenan-Flagler Business School, University of North Carolina, Chapel Hill
2009 Joint and Combined Warfighting School, Joint Forces Staff College, Norfolk, Va.
2011 Joint Force Air Component Commander Course, Maxwell AFB, Ala.
2012 National and International Security Leadership Seminar, Latin America Forces, Washington, D.C.
2013 Combined Force Maritime Component Commander Course, Miami, Fla.
2014 Joint Flag Officer Warfighting Course, Maxwell AFB, Ala.
2015 National Defense University Pinnacle Course, Suffolk, Va.
2016 Leadership at the Peak, Center for Creative Leadership, Colorado Springs, Colo.

ASSIGNMENTS

1. July 1985 - July 1986, student, undergraduate pilot training, Williams AFB, Ariz.
2. July 1986 - July 1988, T-37B Instructor Pilot, Williams AFB, Ariz.
3. July 1988 - December 1989, T-37 Instructor Pilot, Randolph AFB, Texas
4. December 1989 - August 1990, student, AT-38B lead-in fighter training, 435th Tactical Fighter Training Squadron, Holloman AFB, N.M.
5. August 1990 - May 1991, student, F-15C Replacement Training Unit, 1st Tactical Fighter Training Squadron, Tyndall AFB, Fla.
6. May 1991 - July 1995, F-15 Instructor Pilot, 71st Fighter Squadron, Langley AFB, Va.
7. July 1995 - July 1997, F-15 Fighter Flight Commander, 85th Operations Support Squadron, Naval Air Station Keflavik, Iceland

8. July 1997 - July 1999, student, Air Command and Staff and the School of Advanced Air and Space Studies, Maxwell AFB, Ala.
9. July 1999 - February 2000, Chief, Doctrine Branch, Headquarters U.S. Air Forces in Europe, Ramstein AB, Germany
10. February 2000 - May 2001, Deputy, Commander's Action Group, Headquarters U.S. Air Forces Europe, Ramstein AB, Germany
11. June 2001 - June 2002, Assistant Operations Officer, 94th Fighter Squadron, Langley AFB, Va.
12. June 2002 - May 2003, Operations Officer, 71st Fighter Squadron, Langley AFB, Va.
13. May 2003 - May 2004, Commander, 1st Operations Support Squadron, Langley AFB, Va.
14. June 2004 - May 2005, Olin Fellow, Institute for Strategic Studies, Harvard University, Cambridge, Mass.
15. June 2005 - May 2006, Chief, Program Support Division (J39), Joint Staff, the Pentagon, Washington, D.C.
16. May 2006 - June 2007, Executive Assistant to the Director of Operations (J3), Joint Staff, the Pentagon, Washington, D.C.
17. June 2007- July 2008, Vice Commander, 48th Fighter Wing, Royal Air Force Lakenheath, England
18. July 2008 - May 2010, Commander, 71st Flying Training Wing, Vance AFB, Okla.
19. May 2010 - June 2012, Director, Plans, Programs, Requirements and Assessments Directorate, Air Education and Training Command, Randolph AFB, Texas
20. July 2012 - June 2013, Director for Strategy, Policy and Plans (J5), Headquarters U.S. Southern Command, Miami, Fla.
21. June 2013 - December 2014, Chief of Staff, Headquarters U.S. Southern Command, Miami, Fla.
22. December 2014 - October 2016, Commander, 12th Air Force, Air Combat Command, and Commander, Air Forces Southern, U.S. Southern Command, Davis-Monthan AFB, Ariz.
23. October 2016 - present, Deputy Chief of Staff, Operations, Headquarters, U.S. Air Force, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS
1. June 2005 - May 2006, Chief, Program Support Division (J39), Joint Staff, the Pentagon, Washington, D.C., as a colonel
2. May 2006 - June 2007, Executive Assistant to the Director of Operations (J3), Joint Staff, the Pentagon, Washington, D.C., as a colonel
3. July 2012 - June 2013, Director for Strategy, Policy and Plans (J5), Headquarters U.S. Southern Command, Miami, Fla., as a brigadier general
4. June 2013 – Dec 2014, Chief of Staff, Headquarters U.S. Southern Command, Miami, Fla., as a brigadier general and major general

FLIGHT INFORMATION
Rating: command pilot
Flight hours: more than 3,600 hours
Aircraft flown: A-10, F-15A/C/D, AT-38B, T-38A/C, T-6 and T-37

MAJOR AWARDS AND DECORATIONS
Defense Superior Service Medal with oak leaf cluster
Legion of Merit with oak leaf cluster
Bronze Star Medal
Meritorious Service Medal with three oak leaf clusters
Air Medal
Aerial Achievement Medal with oak leaf cluster
Air Force Commendation Medal with oak leaf cluster
Air Force Achievement Medal with two oak leaf clusters

OTHER ACHIEVEMENTS
Chilean Cross for Aeronautical Merit
SICOFAA Legion of Merit Medal In Grade of "Great Cross"

EFFECTIVE DATES OF PROMOTION
Second Lieutenant May 29, 1985
First Lieutenant May 29, 1987
Captain May 29, 1989
Major May 1, 1996
Lieutenant Colonel May 1, 2000
Colonel July 1, 2005
Brigadier General Aug. 6, 2010
Major General Dec. 31, 2013
Lieutenant General Dec. 19, 2014

(Current as of November 2016)

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

STATEMENT OF

VICE ADMIRAL TROY M. SHOEMAKER

COMMANDER, NAVAL AIR FORCES

ON

AVIATION READINESS

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON

READINESS

NOVEMBER 9, 2017

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

Chairman Wilson, Ranking Member Bordallo, and distinguished members of the House Armed Services Subcommittee on Readiness, I appreciate the opportunity to testify on the current state of Naval Aviation readiness and the challenges we face in generating fleet readiness today and in the future.

Today's Navy faces a multitude of challenges around the world. The increased proliferation of threats from nation-state actors and terrorist organizations against our nation and its allies requires a level of global presence not seen in the past twenty-five years. Continued aggression and recent activity from North Korea, provocation from Iranian forces in the Middle East, increased tension over territorial disputes in the South China Sea, and armed-conflict with ISIS in several geographic locations from Syria to Indonesia require our forces to be present and prepared to "fight tonight." Yet, this deterrent presence and capability to quickly respond is demanded under a continually resource-constrained environment that impacts aircraft availability, retention and safety. The necessity to support Global Force Management requirements, coupled with the high operational tempo of deployed forces, has put a strain on Naval Aviation's ability to generate the required readiness needed to support our nation and recover the readiness we've lost over the last six years. General Joseph Dunford, USMC, our Chairman of the Joint Chiefs, recently testified to the Senate Armed Services Committee (SASC) stating, "We realize that what we've been doing in the past is unsustainable moving forward, the demand does exceed the supply, and we need to make an adjustment to the demand as well as the supply." The demand for Naval Aviation forces greatly exceeds our ability to supply those forces. We are meeting forward deployed requirements, but the risk we incur with our forces at home has been steadily increasing. Simply put, chronic

underfunding has limited Naval Aviation's ability to sufficiently generate the readiness that Combatant Commanders continue to consume.

As the Air Boss, I have the distinct pleasure today of leading and supporting our nation's greatest asset, the Sailors and civilians who work tirelessly inside Naval Aviation to ensure we remain the world's pre-eminent sea power. In my recent site visits, I've been humbled and impressed by their "can do" attitude to succeed in the face of adversity. Their professionalism and commitment is the force-multiplier that makes our Navy the world's premier maritime force. However, due to eight years of Continuing Resolutions and the 2011 Budget Control Act, our Sailors have not been resourced adequately to perform their jobs. Over-utilization of our forces to support combat operations since September 11, 2001 without the proper funding has eroded our ability to continue to generate the readiness required to respond to crises, and jeopardizes our nation's future maritime supremacy. Success of our Navy is not measured solely by the deployment of Carrier Strike Groups. Success should be measured by how well we fully resource the readiness generation machine. We will always answer the bell to put combat ready forces forward, however, we have been forced do so for years at the expense of our long-term ability to train and prepare the future force.

Sustainment of the Current Force

On June 12, 2017, Secretary of Defense James Mattis succinctly described the effects of sequestration to the House Armed Services Committee:

> "I retired from military service three months after sequestration took effect. Four years later, I returned to the Department and I have been shocked by what I've seen with our readiness to fight. For all the

> heartache caused by the loss of our troops during these wars, no enemy in the field has done more to harm the readiness of our military than sequestration."

Naval Aviation, the Navy and the Nation need your help to raise the budget caps and to return to sustainable, predictable funding levels - our Sailors are paying the price and it's time we gave them the resources to execute their missions.

Budgetary uncertainties and the continued reduction in the aforementioned funding have reduced the overall size of the Navy, down 41 ships and 90,000 Sailors since September 11, 2001, yet we are continually asked to do more with less. In September of this year, CNO Admiral Richardson testified about the "triple whammy" affecting our Navy – the corrosive confluence of high operational tempo, constrained funding levels, and budget uncertainty that are impeding our ability to maintain and modernize our current force. The resultant smaller fleet, working at a higher pace, is wearing out our equipment and our people. This year, we deployed four Carrier Strike Groups to support combat operations and provide strategic deterrence around the world. Consistent with the Navy's policy of supporting deployed and next to deploy forces, we were forced to cannibalize aircraft, parts and people to ensure those leaving on deployment had what they needed to be safe and effective while operating forward. To continue to provide credible maritime forces around the world, we've made sacrifices at home. Naval Aviation utilizes a "tiered readiness" construct to ensure our resources are focused on deployed and soon to deploy squadrons. When a squadron returns from deployment, we are forced to take many of their aircraft, parts, and people and give them to the next squadrons preparing for work-ups and deployment. To put this in perspective,

in order to properly man the required Carrier Air Wings either on deployment or preparing to deploy at mandated levels of 95%, we do not have enough Sailors left to fill the two remaining Air Wings in their maintenance phase. Due to these shortfalls, we have some squadrons only able to operate a single shift of maintenance (when they should be able to safely run two). We've been forced to take risks in maintenance and production and, as a result, our ability to fix and produce up aircraft and therefore train aviators has suffered.

The hardest hit community within Naval Aviation is the Strike Fighter community. To take action on immediate readiness issues, such as low manning, long-term down aircraft, parts shortages and lack of facilities, we established a "Rhino Readiness Recovery" team to identify and address long-term impacts caused by a lack of consistent readiness resourcing. The team is a combination of subject matter experts from across the Navy and our industry partners who are tasked with solving systemic supply, maintenance, manning and facilities shortfalls that resulted from years of over-utilization and underfunding. What is happening at Naval Air Station (NAS) Lemoore, California is a microcosm for the rest of the fleet. The impacts may be acutely felt at NAS Lemoore, but the systemic issues will impact more broadly. We will use the lessons learned from the Strike Fighter community to enhance our ability to repair aircraft, predict future challenges across the aviation force, and support the warfighter in each of our aviation communities. Key to the success of this effort is consistent, healthy levels of aviation readiness account funding across the Future Years Defense Plan (FYDP), to include investment in our aging infrastructure (military construction) and needed support equipment replacement.

The $2.8B in additional funding you approved for the Navy in Fiscal Year 2017 was used to address immediate readiness shortfalls in the fleet. Thank you for this support. In FY2018, we look to continue funding accounts which sustain our plans for readiness recovery and generation, programs to support our Sailors, modernize current platforms, and purchase next generation aircraft and weapons to maintain the advantage over our adversaries. As mentioned previously, that support must continue throughout the FYDP. At the beginning of October, in our Super Hornet community alone, only half of our total inventory of 542 aircraft were flyable, or mission capable, and only 170 or 31% of the total inventory were fully mission capable and ready to "fight tonight." The readiness level for this community has been on a declining trend for the last few years. While we must prioritize maintenance and readiness dollars to support the fleet, change will not happen overnight. It will take time to see the positive results of more healthy and consistent resourcing. When Budget Control Act limitations took effect several years ago, there was a delay of 2-3 years until readiness impacts were felt across the force. We survived by pooling resources, borrowing parts and people, and using every last item on the shelf to get the job done. It will take some time to replenish what we've consumed, but with your help, we will get ourselves healthy again. We must maintain above 90% funding of the requirement for readiness enabler accounts to see a real impact in the fleet, yet like the lag in BCA impacts, recovery will not manifest itself for two or so years because of the deep and long standing aviation readiness divot created. Succinctly, Naval Aviation needs a multifaceted approach to readiness recovery that includes aircraft procurement, consistent funding of the readiness accounts, and MILCON and infrastructure investments.

Similarly, high operational tempo, constrained funding levels, manpower challenges, and budget uncertainty in our Naval Shipyards have impeded our ability to consistently deliver aircraft carriers out of depot maintenance on time with cascading impacts to carrier strike group training plans. To meet Global Force Management deployment dates, carrier strike groups have been forced to shorten their basic phase and unit level training timelines to meet commitments. Compressing time to train reduces the level of proficiency, effectiveness, safety and lethality of our carrier and air wing teams. This is especially true when we face our near peer competitors. Simply put, we need to get our carrier force into and out of maintenance availabilities on time. It is vital to our training plans and necessary for us to meet the Combatant Commander's demand signal for carrier strike groups. Our record of on time delivery from 2008 to 2016 was mixed. A third of our carrier maintenance availabilities had completion delays exceeding two weeks, some much longer than that. Since December of 2015, our performance has improved, with our four most recent availabilities completing on time. We must continue this trend, and to do so requires us to maintain full capacity, manning, and throughput at our public shipyards with consistent full funding across the FYDP of the ship maintenance readiness accounts. Our shipyards must be able to continue a hiring and employee development plan that will enable them to meet the demand signal.

Challenges With Modernizing the Force

Along with addressing processes and efficiencies to maximize the readiness of our current force, we are quickly moving to modernize Naval Aviation through divestiture of aging aircraft platforms. Procuring fourth and fifth generation aircraft is required for a successful transition. While divestment of legacy capability puts a strain

on an already pressurized aircraft inventory, it is the right choice as we balance current readiness against the need for future capability. Your support of the Department's aircraft procurement requests is essential to managing the risk associated with this trade-off. We are also investing in fifth generation aircraft such as the F-35C and introducing new unmanned aircraft systems such as the MQ-25 and MQ-4 Triton into the fleet to join the already operational MQ-8 Fire Scout. With the introduction of newer technology and more complicated subsystems and components, we must continue to support our Sailors and civilians with adequate schools, technical publications, tools and parts. We can't simply procure more new aircraft; we must also buy the foundational sustainment and training that accompanies those aircraft through their entire life cycle.

Physiological Episodes

The Naval Aviation Enterprise remains laser focused on Naval Aviation's number one safety priority, reducing the risks and effects of physiological episodes (PEs) for our aircrew. We have pooled knowledge, resources, and expertise from within the Department of Defense (DoD), industry and National Aeronautics and Space Administration (NASA), along with aeromedical experts and foreign military partners to tackle the greatest risk to our aviators today. The Physiological Episode Action Team (PEAT) has stood up under the leadership of RDML (sel) Sara Joyner. She is charged with directing all actions to combat PEs and serves as our single point of contact for Navy leadership, Congress and the fleet. She will serve as the central authority for communicating all PE efforts to fleet and training command operators.

I am optimistic about the efforts and progress made so far, and I'm pleased to report our T-45 Goshawks are back in the air training our future Navy and Marine Corps aviators and should be back to flying at pre-operational pause production levels by late November. Engineering updates and changes to the aircraft and some of its components have significantly reduced the occurrence of PEs in the T-45. For the F/A-18 Hornet and Super Hornet, we continue to utilize the highly-effective and methodical Root Cause and Corrective Analysis approach (RCCA) to identify and mitigate the causes of physiological episodes. We have identified cockpit pressurization as a contributing factor in the FA-18 physiological events; however, the relationship between pressure fluctuations and the resultant effects on aircrew is complex and likely has other factors influencing the PE occurrences. To address the pressure issues, we are applying hardware and software changes for all Hornets and Growlers.

The Navy's efforts to resolve the types of PEs experienced by both T-45 and F/A-18 aircrews remain focused on ensuring the safety of our aircrews and restoring our aviator's confidence in the platforms they fly. We will not stop until we fully understand and have corrected the causes of these physiological episodes in our tactical aircraft, while working diligently to better understand the human-machine interface.

The Human Toll

As mentioned earlier, the resourced-constrained environment we have been operating in has not only taken its toll on aircraft and ships, it has also impacted our people. Retention of our talented Sailors is critical to our success. Retention and readiness are interdependent and impact one another. It is paramount that both readiness

and retention issues be viewed holistically to gain an understanding of the struggles in maintaining the proper numbers and skillsets of aviators and Sailors. Consequently, readiness problems affect quality of service and negatively impact retention. Additionally, last minute personnel moves (churn for Sailors and families) that we've had to make to ensure next deployers are manned to appropriate levels, is taking its toll on retention as well. We must work diligently to retain our highly qualified technicians that maintain these sophisticated, complex aircraft and aircraft systems.

The Navy is also challenged to retain aviators, largely due to quality of service concerns, or stated differently, job satisfaction. The lack of flight hours, tactical training and progression of qualifications, coupled with a broadening pay gap when compared to private industry, combine to create a deficit in mid-grade and senior aviators (between 10-20 years of service.) Although accessions have remained relatively stable since 2012, the loss of mid-grade and senior officers directly impacts squadron readiness through a shortage of qualified and experienced aviators. Increasing aviator accessions does not solve the problem since a surplus of junior aviators in squadrons will further exacerbate low flight hours. Several initiatives, both monetary and non-monetary are in development to address retention shortfalls. The Fiscal Year 2017 National Defense Authorization Act (NDAA) authorized increasing the aviation bonus and career incentive pay programs, and we are in the process of significantly reshaping these programs for aviator Department Head and Commanding Officer bonuses to better target and retain talent. Additionally, other career-enhancing opportunities, such as the Career Intermission Program and Tours with Industry are being implemented to improve retention , but the largest hurdle to Aviator retention in most communities will still be

low flight hours due to aircraft availability. We will continue to explore creative ways to retain our best and brightest; however, job satisfaction, work-life imbalance and quality of service issues will remain challenges.

Conclusion

I have spoken today largely about our Carrier Air Wings and Strike Fighters because they are the most acutely affected communities in Naval Aviation. Whether carrier-based or land-based, manned or unmanned, our leading edge technologies present new opportunities to fly the world's most advanced and capable aircraft, while providing an expanded range of military options to our nation's decision-makers. However, the cracks and fissures are clearly showing across the force. We need Congress' urgent and continued support in order to arrest the erosion of readiness force-wide and rebuild wholeness in Naval Aviation.

Although we face many readiness challenges, I can assure you our Naval Aviation team remains the finest in the world. We owe our Sailors sustained, predictable budgets that ensure resources are prioritized to generate and recover current readiness, sustain our aircraft and aircraft carriers, modernize the fleet and invest in next generation technology that provides the tactical advantage over any adversary. Mr. Chairman and distinguished committee members it has been my distinct honor and privilege to serve as Naval Aviation's Air Boss for the last three years and I remain fully committed to working with you and Navy leadership to address our most pressing readiness challenges. Thank you for your continued commitment and support to do the same.

Vice Admiral Mike Shoemaker
Commander, Naval Air Forces
Commander, Naval Air Force, US Pacific Fleet

Vice Adm. Mike Shoemaker, a native of St. Petersburg, Florida, graduated with honors from the U.S. Naval Academy in 1982 with a Bachelor of Science degree in Systems Engineering and was designated a Naval aviator in July 1984.

Shoemaker's operational assignments include tours with Light Attack Squadron (VA) 105, USS Forrestal (CV 59); Carrier Air Wing (CVW) 3, USS John F. Kennedy (CV 67); Strike Fighter Squadron (VFA) 105, USS Dwight D. Eisenhower (CV 69), USS Enterprise (CVN 65) and USS Harry S. Truman CVN 75); CVW-17, USS George Washington (CVN 73); Carrier Strike Group (CSG) 9, USS Abraham Lincoln (CVN 72) and CSG 3, USS John C. Stennis (CVN 74). Shoemaker commanded VFA-105, VFA-106 (F/A-18 Fleet Replacement Squadron), CVW 17, CSG 9 and CSG 3.

His shore assignments include VA-174 and instructor duty with VA-122 and VFA-106. He also served as aide to the vice chief of Naval Operations and commander, U.S. Pacific Command; was assigned to Navy Personnel Command (head of Aviation Officer Placement - PERS-433); and, was the executive assistant to Commander, U.S. Pacific Fleet. As a flag officer, he served as assistant commander, Navy Personnel Command for Career Management (PERS-4) and later as commander, Naval Air Force Atlantic from June 2013 to January 2015. He has completed the Naval War College Non-Resident Program and is a graduate of the Joint Forces Staff College.

Shoemaker has accumulated over 4,400 flight hours, primarily in the A-7E Corsair and the F/A-18C Hornet and has 1,066 carrier-arrested landings. His personal decorations include the Legion of Merit (6), Defense Meritorious Service Medal, Meritorious Service Medal (3), Air Medal (3) (one individual award with combat "V" and two strike/flight awards) and other personal, campaign and service ribbons.

Shoemaker became Naval Aviation's 7th "Air Boss" in January 2015.

Updated: 22 January 2015

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
READINESS SUBCOMMITTEE

STATEMENT OF

LIEUTENANT GENERAL STEVEN R. RUDDER
DEPUTY COMMANDANT FOR AVIATION

BEFORE THE

READINESS SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

AVIATION READINESS

November 9, 2017

NOT FOR PUBLICATION UNTIL RELEASED BY
THE HOUSE ARMED SERVICES COMMITTEE
READINESS SUBCOMMITTEE

INTRO

Chairman Wilson, Ranking Member Bordallo, distinguished members of the House Armed Services Subcommittee on Readiness, and other distinguished members, I appreciate the opportunity to testify on the current state of Marine Corps Aviation readiness. As you are all aware, the Marine Corps' Title 10 responsibility is to be the Nation's Expeditionary Force in Readiness. We are charged and expected to always be the most ready when the Nation is least ready. This responsibility is at the very core of our identity as Marines.

During the last year, Marines executed approximately 104 operations, 87 security cooperation events with partners and allies, and participated in 61 major exercises. Nearly 23,000 Marines remain stationed or deployed west of the International Date Line to maintain regional stability and deterrence in the Indo-Asia-Pacific region. In addition to providing Foreign Humanitarian Assistance in St. Martin, Guadeloupe, and Dominica, your Marines also provided Defense Support of Civil Authorities to U.S. citizens in Texas, Florida, Puerto Rico and the U.S. Virgin Islands after recent Hurricanes Harvey, Irma and Maria wreaked havoc on the homeland. We continue to patrol the seas, afloat with our Navy brothers and sisters, able to project power at a moment's notice should the nation need us. We also stand ready to respond to crisis with our Special Purpose MAGTFs, tailored to reinforce Marines and assist U.S. personnel abroad.

WHERE WE WERE

When we testified before you last year we highlighted that Marine Aviation, mandated by law to be a T 2.0 force – a "ready" force – was going through a period of risk. Our "ready bench" – the number of flyable aircraft on-hand if we were required to respond to a crisis – was about 43%. We were progressing through the largest aircraft transition the Marine Corps has ever experienced as we modernized every type/model/series (TMS) aircraft in our inventory. However, even in an environment

of budget uncertainty, with poor aviation readiness rates, while conducting an in-stride aircraft transition, and with combat operations officially ending in Iraq and Afghanistan, our operational tempo increased. Our TACAIR, MV-22 and KC-130 units, on average, maintained a deployment to dwell ratio of 1:2. In other words, a Marine who deployed for six months would only one spend one year home before deploying again. That is technically a surge condition, *and we have been operating at this tempo for more than fifteen years*. We continued to fulfill our Global Force Management commitments, Special Purpose MAGTFs, Marine Expeditionary Units deployed afloat etc., but we did so at a cost. We did so with units achieving T 2.0 – the minimum requirement for tactical proficiency – just prior to deployment, or sometimes not at all, at the expense of our remain-behind forces. And we did this with aircraft that are operating beyond their designed life, and are some of the oldest in the DoD.

Given the gravity of our readiness challenges, Marine Aviation commissioned a series of Independent Readiness Reviews (IRRs) for some of our more challenged communities – the AV-8B, CH-53E and MV-22B. These IRRs, led by former flag and general officers from both Marine and other military services, brought in qualified outsiders to take an unbiased look at our programs. Concurrently, we had to make tough decisions within specific communities in an effort to manage readiness and mitigate risk within our next to deploy units. For example, we temporarily reduced the flight line entitlement for our Harriers (AV-8Bs), CH-53Es, and Hornets (F-18s). We did this because we simply didn't have enough of them on the flight line and elected to spread-load the remaining available operational aircraft. This temporary reduction moderately improved unit readiness but did so at the expense of flight hours – the true measurement of aviation health – which had reached historic lows compared to previous years.

WHERE WE ARE

As Deputy Commandant for Aviation, my focus is building readiness for combat. It is my top priority, enabled by modernizing the force, supporting Marine aircraft maintainers, and MAGTF integration. Today, most of our squadrons still lack the required number of ready aircraft required to "fight tonight," but we are seeing incremental improvement. There are many facets to our aviation readiness issue, and I know this committee understands that Readiness is more than the sum of its parts. I would like to focus on just two:

The first is maintenance readiness. Our overall readiness, fleet-wide across our different types of aircraft, is not where we want it. However every time an aircraft goes up, that aircraft is certified "safe for flight" and ready for the demands we put on it. We do not operate unsafe aircraft. Second is aviator readiness. Fleet-wide, our aviators' flight hour totals also are not where we want them, and this second problem comes from the first. We will not fly an unsafe aircraft, and so if aircraft are "down" for flight that day our aviators have lost a chance to build proficiency.

There is an important difference in these two readiness measures. Maintenance readiness is like a light switch: an aircraft is either ready to fly, or it is not. Aviator readiness is like a rheostat: a pilot can fly with three hundred total hours or with three thousand hours, and be qualified either way. Over time, though, reduced flight time and low proficiency creates *lost experience* – a gap – that follows our aviators throughout their careers. It means we have flight leaders, tactics instructors, and squadron commanders with less experience than their predecessors.

These two problems, combined, lead to the situation today. Not enough "up" aircraft mean not enough time for our aircrew to get better at their jobs; being "current" or "qualified" are distinctly different than being "proficient."

We are about 20% short of the required aircraft to meet Congress' T 2.0 mandate, and 7% short of our in-reporting requirement. For example, in my TACAIR fleet I can fly about half of the aircraft that I'm required to have on my flight lines. Our non-deployed units still sacrifice some readiness and training to ensure our deployed units are ready to fight, but this gap is improving. Our TACAIR deployment to dwell has improved on average from 1:2 to 1:2.6, which is closer to the optimal ratio of 1:3, and we've managed to increase our flight line entitlements for F/A-18s and AV-8Bs back to 12 and 16, respectively.

This shows our comprehensive recovery strategy is working -- we are slowly adding aircraft to our flight line. In FY16 we added 44 ready aircraft to the fleet, which directly affected our FY17 flight hours per crew per month (HCM). Our HCM increased by 14% -- almost two full hours -- compared to the previous year (+1.9 HCM from FY16). However, we are still challenged with low readiness rates and low flight hours for aviators and aircrew. In FY17 Marine aviation's overall RBA recovery was flat. It only increased by 6 aircraft, which is a stark difference from the previous year, but still moving in the right direction. Through modernization and readiness recovery we have improved readiness by about 15% in our modern fleet, and by about 10% in our legacy fleet. Within this, some communities have improved more than others. The KC-130Js are up by over 25% and the AH-1Zs are up nearly 50% from the previous year.

We are designed to do a lot with a little, and we must move toward becoming a T 2.0 force as quickly as possible by rebuilding our "ready bench." We will fix aircraft by executing our readiness recovery plan, and by procuring aircraft to modernize our fleet. The readiness recovery initiatives we have established are positively impacting RBA recovery. However, the readiness gains have plateaued while utilization rates of available aircraft are increasing. Our readiness recovery efforts will help us bridge the gap and allow us to maximize utilization of our legacy aircraft through the transition, but modernization of our legacy fleet is the true key to regaining readiness. As of now, we are 43% complete with the modernization of every squadron in our inventory.

Our readiness recovery strategy is informed by the IRRs, which we have now completed for almost every TMS aircraft in our inventory. The IRR findings inspired several initiatives that will improve readiness recovery. While every TMS requires a unique recovery strategy, there are four common themes that surfaced in each IRR across all TMS: people, parts, process and funding.

People

We continue to recruit the best and brightest, but we are closely watching retention in our two most critical areas: pilots and aviation maintainers. While we have the correct number of aviators in our Service, but there are shortfalls in specific communities like MV-22, F/A-18 and F-35. We believe we are challenged in these communities because we have a high operational tempo, but lack the ready aircraft to conduct high intensity training with our non-deployed squadrons. Operationally, these TMS are high-demand, low-density communities. As such, we are offering an aviation bonus to pilots in these specific communities as well as a bonus to our best maintainers.

Healthy readiness is contingent upon having spare parts and trained aviation maintenance Marines to fix our aircraft. Regarding our maintenance Marines, our focus is ensuring we have the right people with the right leadership and skill sets in positions of authority and responsibility. We are a very young force operating on the most technologically advanced aircraft in the world. We have a high turnover rate; essentially, we have an entirely new maintenance department in every squadron every four years. For our Marines to remain competitive for promotion within their specific pipelines they are required to PCS (i.e. move) and perform different jobs outside their primary Military Occupational Specialty (MOS). In specific aviation communities, this created an “experience gap” at some of our supervisor levels because we failed to track and prioritize critical skills essential for maintenance supervisors; we are doing that now.

We are offering a "retention bonus" to some of these maintainers with the qualifications and skill sets we need in an effort to keep them on the flight line supervising our wrench-turners. If they receive the bonus, they sign a contract to stay with their current unit for an additional two years, which will help us keep a solid experience-base in the maintenance community and, ultimately, improve readiness. To continue building experience within our ranks we have also developed several other initiatives. We created the Advanced Maintenance Officer Course, an advanced maintenance training course for officers and senior SNCOs. We created the Advanced Aviation Management Training Course, which targets our SNCO leaders and enhances their maintenance management skills. To bring this all together and capitalize on the investment we're making in our maintenance Marines, we updated our MOS manual so advanced qualifications like collateral duty inspector, collateral duty quality assurance representative (CDQAR), and multi-system CDQARs will generate additional specialties that will be used to track unit staffing. We're keeping the right Marines with the right qualifications in the right place.

Parts

Non-Mission Capable – Supply (NMCS) continues to be the primary degrader of Marine aviation readiness; we do not have enough parts on the shelves to fix the aircraft on the flight lines. As we continue to meet a high operational tempo with legacy aircraft that are rapidly aging beyond their designed life, Marine aviation offset procurement of modern aircraft to properly resource historically under-funded readiness enabler accounts. Fully funding our spares accounts is critical to recovery and transition. We funded them to their maximum executable levels in FY17 through the Request for Additional Appropriations (RAA), and funded them to unprecedented levels in FY18. We must have spares to recover readiness in our legacy aircraft, and to get them takes time and consistent funding levels.

We must also have spares to build and sustain future readiness in our new aircraft. The flat RBA recovery in FY17 is due to delayed spare parts funding. For example, for all the spare parts ordered during FY17, about 7% of them weren't received for over 51 days. That sounds like a small number, but an *entire aircraft* can be non-mission capable for just *one component.* When funded properly and consistently, we expect to see a corresponding RBA recovery in 18-24 months. As we rebuild our ready bench and increase aircraft on the flight line, we will require additional funding for flight hours to sustain our recovery model, continue to fly, and train our aircrew.

Funding

Congress has been helpful with funding our Readiness Recovery Plan, and this is essential. Our strategy is largely informed by our IRRs. For instance, last year we started the "CH-53E Reset" with the sole focus of resetting the entire CH-53E fleet to a pre-war state. This reset is critical because 1) our inventory is inadequate (143 of 200 required), and 2) of my remaining inventory, only about a third (37%) of them are flyable. We have inducted 28 aircraft into reset, with 16 aircraft currently in work. The CH-53E reset averages about 180 days per aircraft. To date, we have "reset" 13 CH-53Es and returned them to the fleet. These aircraft have already accumulated over two thousand flight hours and have cut the maintenance-man hours nearly in half, which are two metrics for measuring the return on investment of this program.

Another key initiative is our MV-22 Common Configuration Readiness and Modernization (CCRAM) program. The MV-22s were deployed ahead of schedule in 2007 and have been in combat for over a decade. This high demand signal required us to put them into operation as fast as they were coming off the line. That deployment rate along with a decade's worth of aircraft improvements yielded 75 different configurations of the MV-22. RBA rates are currently at 48%, which is unacceptable. CCRAM is a critical readiness initiative required to restore our fleet and aircrew to T 2.0, and will restore and

sustain 34 additional RBA among our existing fleet. To this point, a 7-year multi-year procurement contract for V-22 allows us to capitalize on savings and simultaneously support the CCRAM initiative.

These are two of many readiness recovery initiatives we've implemented across all our TMS aircraft in an effort to regain RBA, rebuild our flight hours, and become a T 2.0 force as required by law.

AVIATION MISHAPS

The true metric of health in aviation is aircrew flight hours. While we have increased our average HCM in the last year, we are still well below what is required. Chairman Dunford recently commented on the current flight hours our aircrew are getting compared to what they used to fly. He also discussed the different responses a high-hour aviator and a low-hour aviator may have in a given scenario. He concludes that the high-hour aviator is better-armed to make a split-second assessment and respond to an anomalous situation, correctly. General Dunford's assessment is spot-on. A decade ago, Marine aviators averaged about 16.3 HCM. Today, we are averaging 15.4 HCM. This is a mere 5.5% reduction, but it doesn't tell the whole story. Newly-winged aviators typically remain in their first fleet squadron for three years. This group is the foundation of the future of aviation. When I compare these 2017 "graduates" of their first fleet tour to the 2007 "class", those pilots today have averaged 20% less flight hours over their three year tour than the same group in 2007.

While there is still no direct link between low readiness rates and high Class A mishap rates, there's no question that naval aviation is an inherently demanding discipline, and is unforgiving of any mistakes. Well trained and practiced aviators react to malfunctions and difficult circumstances far better and are much less likely to make mistakes, which in turn increases the chance of preventing these anomalous events from becoming mishaps. We typically think of mishaps in terms of number of mishaps and mishap rate. Given recent tragic events within our community, one could question whether flying

more flight hours is the correct solution. One might draw the conclusion that more flight hours equals more risk. To that end, mishap rates are expressed in terms of percent per 100,000 flight hours.

Historically, our mishap rates have been fairly flat though there has been a recent spike. However, a deeper analysis might be more revealing if we look at the environment in which we are seeing these mishaps (e.g. reduced visibility landings – or brownouts, shipboard landings, low altitude flying, etc.) compared to how often we are training in that environment (i.e. currency and proficiency). Viewed as a bell curve, the model for our aviators would be exposure to operational risk graphed against appropriate training and flight hours.

Conclusion

I will conclude by stating that Marine aviation readiness is improving, but fragile. Our readiness recovery lies in modernization of our aircraft, and fixing the ones we have. To recover readiness, we require four things from Congress. First, we need stable and predictable funding *over time*. I know this committee understands the damage continuing resolutions cause; even if we receive all the appropriations we ask for, if it is not *on time* we will be challenged to execute it. Second, we must continue to modernize our legacy aircraft as quickly as possible in a fiscally responsible manner. Third, we need Congress to fully fund our readiness enabler accounts and flight hour program so we can sustain our current recovery model. Finally, we require time – time for our initiatives to take effect.

Mr. Chairman, distinguished committee members, we in the Marine Corps appreciate your continued support and look forward to answering your questions.

Lieutenant General Steven R. Rudder
Deputy Commandant for Aviation

Lieutenant General Steven R. Rudder assumed his current position as the Deputy Commandant for Aviation, Headquarters Marine Corps in July 2017.

LtGen Rudder is a native of Canton, CT, and was commissioned as a Second Lieutenant in June 1984. LtGen Rudder previously served as the Director of Strategic Planning and Policy (J5), U.S. Pacific Command.

LtGen Rudder's previous assignments include: Serving in Co B, 3rd Amphibious Assault Battalion; Student, NAS Pensacola, FL, designated a Naval Aviator; HMT-303, AH-1J helicopter training; HMLA-367, Maintenance Quality Assurance Officer and Weapons and Tactics Instructor; unit deployments to Futenma, Okinawa, and Operations DESERT SHIELD/STORM; HMM-161 (REIN), Weapons and Tactics Officer deploying with the 11th MEU(SOC) back to North Arabian Gulf; AH-1 Division Head, Marine Aviation Weapons and Tactics Squadron One; Operations Officer, HML/A-167; Future Operations Officer, deploying with the 22nd MEU(SOC) to EUCOM and CENTOCM AOR, HMM-261(REIN); Office of Net Assessment, the Office of the Secretary of Defense serving as Mr. Andrew Marshall's Military Assistant; Squadron Commander, HML/A-167 deploying to EUCOM AOR in support of Dynamic Mix; Senior Watch Officer, OIF, 3rd Marine Air Wing Tactical Command Center; J5 Lead planner for Afghanistan and Pakistan, CENTCOM, Tampa, FL; deployed to Afghanistan, Pakistan and Qatar in support of Operation ENDURING FREEDOM; Commander, Marine Air Group 26, deploying to Al Asad, Iraq, in support of Operation IRAQI FREEDOM 9.1; Branch Head of Aviation Expeditionary Enablers (APX), Headquarters Marine Corps Aviation; Legislative Assistant to the Commandant, Headquarters Marine Corps, Office of Legislative Affairs; Commanding General, 1st Marine Air Wing, Okinawa, Japan; deployed Wing to Thailand and South Korea.

LtGen Rudder holds a Bachelor of Science Degree in Business Administration from Boston University, a Masters of Military Studies Degree from the Marine Corps Command and Staff College, and a Masters of Strategic Studies from the United States Army War College.

Personal decorations include the Defense Superior Service Medal, Legion of Merit with Gold Star, Distinguished Flying Cross with Combat 'V', Defense Meritorious Service Medal with Gold Star, Meritorious Service Medal with Gold Start, Air Medal Strike Flight 4, Navy Commendation Medal with Gold Star and Combat 'V', Joint Achievement Medal and Navy Achievement Medal.

RECORD VERSION

STATEMENT BY
MAJOR GENERAL WILLIAM K. GAYLER
COMMANDING GENERAL,
U.S. ARMY AVIATION CENTER OF EXCELLENCE

BEFORE THE

SUBCOMMITTEE ON READINESS
COMMITTEE ON ARMED SERVICES
U.S. HOUSE OF REPRESENTATIVES

FIRST SESSION, 115TH CONGRESS

ON AVIATION READINESS

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STATEMENT BY
MAJOR GENERAL WILLIAM K. GAYLER
COMMANDING GENERAL,
U.S. ARMY AVIATION CENTER OF EXCELLENCE

Chairman Wilson, Ranking Member Bordallo and fellow distinguished Members of the Subcommittee on Readiness, I sincerely appreciate the opportunity to appear before you to discuss the state of Army Aviation readiness. I am honored to represent the Army leadership, the military and civilian professionals, and the courageous men and women in uniform who serve our great Nation.

Army Aviation provides an unparalleled advantage to our Nation as a fundamental element of the Joint Force, providing Combatant Commanders with the reach, protection, and lethality to fight and win against increasingly capable opponents in complex environments. The foundation of Army Aviation's advantage is our professional, agile, and adaptive aviation leaders and Soldiers. Army Aviation's number one priority is maintaining combat readiness which provides our Soldiers and Commanders with a decisive advantage while fulfilling the Nation's commitments. Army Aviation combat readiness is comprised of fully trained and proficient units led by competent leaders, equipped with modern and capable aviation platforms at the appropriate capacity. These factors enable Army Aviation to thrive as an integral member of the Joint Force.

Army Aviation units and Soldiers have been routinely tested in a variety of harsh operational environments over the past 16 years and through it all, have performed magnificently. However, force structure reductions, increased global requirements for Aviation forces, funding uncertainty, and an increased emphasis on collective level preparedness have raised concerns about the overall readiness of Army Aviation. Last year, LTG Mangum informed this committee about GEN Milley's guidance to form a Holistic Aviation Assessment Task Force (HAATF) to conduct a comprehensive review of Army Aviation to ensure its readiness for the future. The Task Force examined leadership, readiness, training, maintenance and sustainment, policy, and resources

within Army Aviation. The Task Force submitted 63 recommendations for improvements, 30 of which have either been implemented or have approved plans of action to address the given issue. We intend to have an approved way-ahead for all 63 recommendations by the end of FY 18. There is no doubt that Army Aviation will be more effective, efficient, and safe as result of this study and applied solutions. On behalf of our Acting Secretary, the Honorable Ryan McCarthy, and Chief of Staff General Milley, I am honored to discuss the state of Army Aviation readiness with you.

Maintaining Readiness

Army Aviation's number one priority is building and maintaining readiness. Readiness is the capacity of our forces to conduct the full range of military operations to defeat all enemies regardless of the threats they pose or the environments in which we meet them. Army Aviation generates readiness through manning, training, and equipping forces and developing leaders to fulfill the requirements of Combatant Commanders. Today, Army Aviation units are highly committed globally; our Soldiers are currently operating in numerous countries around the world, executing combat and theater security cooperation missions. However, we continue to contend with reduced and unpredictable funding, increased demands on a reduced force structure, and aging equipment, three factors that loom large at a time when threats to U.S. interests continue to rise.

Manning

Recent force structure adjustments and fiscal constraints caused the Army to make difficult resourcing decisions. We prioritized short-term readiness over long-term recruitment and training required to secure and maintain a strong force. In response to a changing fiscal environment and as a direct result of the implementation of the Budget Control Act of 2011, programmed training allocations were reduced below the minimum requirement, which resulted in a significant under-accession of Regular Army Aviation Warrant Officers. We are compensating for the shortfall by retaining an increased number of senior Aviation Warrant Officers. Although our current aggregate manning levels are healthy, over twenty-five percent of Aviation Warrant Officers are now

retirement eligible. Additionally, we are experiencing unprecedented recruitment of Army Aviators by the commercial airline industry. This may affect the Army's ability to retain highly-skilled aviators in all components.

The Army is actively addressing these manning concerns through three lines of effort: accessions, increasing training throughput, and retention. The Army began increasing accessions from 350 Regular Army Aviation Warrant Officers in FY 17 and will continue increases to reach 475 annually over the next 2 to 3 years. The Army is also increasing its institutional capacity to train new pilots to ensure a sufficient warrant officer inventory in the future. Lastly, the Army recently offered a graduated incentives program to qualified aviators to target two warrant officer populations: pilots nearing the end of their initial six year Active Duty Service Obligation and retirement eligible warrant officers. This targeted and graduated incentives program seeks to extend the service of junior warrant officers and retain sufficient senior warrant officers to ensure adequate capacity and experience throughout the force. With these efforts in place, the Army witnessed a reduction in the projected shortfall of junior grade Regular Army Warrant Officers from 731 in March of this year to 387 in September. Looking ahead, Army Aviation anticipates adequate and sustainable manning, retention, and experience to ensure for a strong force.

Training

A 2012 Rand study assessed that 13 Active Component Combat Aviation Brigades were required to execute mission requirements in support of the Army's ongoing global commitments. Since then, we reduced the number of Active Component Combat Aviation Brigades to 11. As a result, Army Aviation has lost strategic depth which critically tests our ability to modernize the force without impacting readiness and our ability to meet emerging requirements. In FY 18 and 19, we will commit an overwhelming percentage of Aviation Forces to combat deployments or rotational requirements, Homeland Support requirements, Combat Training Center training requirements, and aircraft modernization efforts. Army Aviation's reduced capacity and the subsequent stress on the force has additional ramifications. In FY 17, the total flight

hours executed by Army Aviation were among the lowest totals of any annual period over the past 30 years. There are a number of variables that caused this result: unpredictable funding, aircraft fielding, transfers, modernization efforts, unforecasted or adjusted deployments, and training time lost due to trans-Atlantic movements of Combat Aviation Brigade equipment sets. Leaders at all levels are rolling up their sleeves to rapidly and effectively work through these challenges to build the most capable Army Aviation force possible.

Currently, Army Aviation is funded at a monthly rate of 10.8 hours per aircrew, an amount that produces proficiency at the platoon level; proficiency that is sufficient for counterinsurgency operations in permissive operational environments. This level of funding is in line with what we have been able to execute in recent years. However, to fight and win in Unified Land Operations against near-peer or peer adversaries, aviation units must be proficient at the company and battalion level. We must acknowledge that numerous future challenges and threats will require Army Aviation to operate in what will likely be the most complex, hazardous, and lethal environment we have faced to date. Training for this environment – terrain flight altitudes, large formations, complex operations against highly capable opponents – presents its own hazards. As the aforementioned organizational turbulence subsides, Army Aviation will need your support to assure it has the resources to achieve higher levels of readiness.

Maintenance:

Army Aviation flight operations are inherently dangerous and the sophistication of modern aircraft systems requires highly skilled professionals and standardized maintenance procedures to ensure the airworthiness of Army Aircraft. Insufficient maintenance practices can lead to, at best, a failed mission and, at worst, a catastrophe involving loss of life and destruction of equipment. Last year, LTG Mangum testified to this committee about the importance of leveraging trained and ready Soldiers to maintain aircraft to meet current and future demands. He highlighted the detrimental impact that years of contract-provided maintenance have had on aviation maintainers. Without adequate opportunities to gain experience or maintain expertise in their Military

Occupational Specialty, these Soldiers were not proficient in maintaining aircraft without significant contractor augmentation. Failure of units to meet aviation readiness rates is evidence of reduced maintenance proficiency in the force. Today's mid-grade aviation maintainers have less knowledge and experience which results in increased operating costs due to insufficient trouble-shooting skills (inability to properly identify malfunctioning components and/or replacing functioning components). Aviation units have since decreased their dependency on contract maintenance, particularly in deployed environments. Furthermore, the Army Aviation Enterprise is actively rectifying maintenance training deficiencies in the institution and across the force consistent with recommendations made by the HAATF. However, it is important to note that these changes will take time to propagate throughout and become sustainable in the force.

Fiscal uncertainty also poses a challenge to maintaining aircraft, resulting in detrimental impacts to readiness. Inconsistent funding results in highly variable and unpredictable parts demands across the Aviation Enterprise which challenges appropriate inventory. Furthermore, aspects of our logistics systems are designed to deliver efficiencies during periods of normal demand. These systems, however, are not designed to provide strategic depth and are not well-postured to accommodate surge requirements. At a lower level, units can be constrained to delay the purchase of repair parts until funds become available. This practice results in deferred maintenance which reduces the amount of aviation assets available for training and impacts mission capable rates across the force. While we do not assess a direct relationship between deferred maintenance and increased risks to safe flight operations, we do see fiscal uncertainty manifest as increased risk to readiness which degrades our preparedness to fight tonight. In practice, many units are making readiness decisions and delaying parts ordering based on limited funds available. This has some impact on readiness reporting, maintainer proficiency, and aircraft available to train.

Aviation Safety

Army Aviation operations are inherently dangerous, whether conducted in peacetime or during combat operations. Training aviation operations is a complex and

resource-intensive effort that requires careful oversight, management, and leadership to sufficiently mitigate risk. Its effective execution provides ready and relevant capability to the Joint Force. Over the past four decades, the Army dramatically reduced major aviation accident rates. While we regrettably experienced nine Class A rotary wing aviation mishaps during FY 17, the number of incidents remains below the five and ten-year averages ((1.11 accidents per every 100,000 flight hours in FY 17, five-year average – 1.14, ten-year average – 1.33). *(Class A - permanent disability, loss of life or cost greater than $2 Million; Class B - cost less than $2 Million but greater than $500,000; Class C - cost less than $500,000 but greater than $50,000))*. The Army's nine Class A rotary wing accidents during FY 17 resulted in the loss of ten aircrew members and the destruction of 6 aircraft. The investigations for 5 of those accidents are complete, but initial and completed findings indicate that 6 of the 9 were a result of human error. While one accident is too many, we have not seen an appreciable change to recent accident rates in comparison to historical norms.

Human error contributes to the majority of all Army Aviation accidents, which consistent with the causes for accidents throughout the broader aviation community. In fact, in 67% of all Class A accidents in FY 16 and FY 17, human error was determined to be the causal factor. The recent Class A accidents involved a mixture of both experienced and inexperienced pilots, so we cannot accurately draw a direct causal connection between these accidents and individual flight time. We are confident, however, that aviators are more optimally prepared to handle the complexities of aviation operations through adequate repetitions in training, which is currently being challenged by reduced flight hour resourcing. While even perfect practice will never completely eliminate human error, the improved confidence and proficiency that our aviators gain through increased flight time not only enhances mission effectiveness, but also mitigates risk to aviation operations.

It is important to emphasize that the focus of training in today's Army Aviation units has expanded significantly beyond preparing for counterinsurgency operations in the relatively permissive environments of Iraq and Afghanistan. The current global security environment demands a shift in emphasis to support Joint operations against a

much broader range of threats. We use the most demanding challenge – decisive action in support of Unified Land Operations – as our benchmark for training. Army Aviation simulates the decisive action challenge by recreating conditions in training that prepare units to face peer competitors in high threat environments. Elevated risk levels accompany this training, however, due to low altitudes required to defeat radar threats, increased complexities that these missions require, and training conducted at echelons above the team and platoon level – the opposite of what has been the norm over the past sixteen years of conflict. One method that Army Aviation will use to reduce risk in the future is through incorporating Supervised Autonomy into both existing platforms, and Future Vertical Lift. The concept of Supervised Autonomy will leverage technology to incorporate cognitive aiding into aircraft and aircraft systems to lessen or in some cases, eliminate human stressors that currently cause accidents, as well as to increase the survivability of the aircraft and aircrews. In the near term, Army Aviation units will mitigate these increased risks as we have always done, through engaged and decisive leadership.

Balancing Readiness and Modernization

Army Aviation initiatives to regain and sustain readiness have come at a cost to modernization. Over the past decade and a half, military operations largely focused on low-tech enemies in semi-permissive environments. Force structure and organizational constructs were developed under modularity to generate efficiency and meet the demands of the Army force generating cycles. The coupling of these decisions with a fiscal environment that has reduced the Aviation modernization budget challenges Army Aviation's ability to modernize and close key operational capability gaps. Modernization efforts have been delayed and strategic depth in the force has been largely eliminated, leaving reduced capacity to meet emerging requirements. As a result, Army Aviation is optimized for a semi-permissive, counter-insurgency fight and is in critical need of new capabilities and capacity that provide overmatch against enemies in more lethal and contested environments.

Army Aviation requires modernized equipment and sufficiently trained manpower to win decisively. Today, we risk being outmanned, outgunned, and outdated. In order to modernize Aviation formations to compete with powers that possess advanced military forces, Army Aviation must make tough choices on key capability development efforts that would be unaffordable if programmed for the entire force. The result is insufficient depth to equip units with updated equipment such as Aviation Survivability Equipment, where limited equipment sets are prioritized to deploying units only, and often delivered and installed immediately prior to deployment.

The current aviation fleet will continue to serve us well for the next several decades. However, these legacy platforms are reaching their engineering design limitations, requiring expensive, incremental improvements to maintain a competitive edge in future operating environments. In the near term, the Aviation Enterprise is working hard to develop capabilities at scale that can bridge gaps with potential adversaries in reach, protection, and lethality. In the mid-term, we need to make difficult choices now about the legacy fleet and invest in future vertical lift to ensure that Army Aviation provides the capability that ground commanders need to dominate the future battlefield.

Conclusion

Army Aviation is and will remain an essential member of the Joint Force and will extend its distinguished record of providing unparalleled capability to Combatant Commanders across the full range of military operations. Despite increasing demand for forces and budgetary pressure, Aviation Soldiers, leaders, and civilians are working tirelessly to build and maintain readiness while refocusing on the threat posed by peer competitors. However, we have paid for this readiness by assuming risk in meeting contingency requirements and deferring investments in equipment modernization. We can assure you that the Army's senior leaders are working to address these concerns, as well as the needs of the Army now and in the future. We ask for your help in alleviating these constraints to get back on a path of sustained readiness and

modernization investment as we move forward into an increasingly complex future. Your continued oversight and support is greatly appreciated.

Mr. Chairman and distinguished Members of this Subcommittee, thank you for your steadfast and strong support of the outstanding men and women in uniform, our Army Civilians, and their Families.

Major General William K. Gayler
Commanding General
U.S. Army Aviation Center of Excellence and Fort Rucker

Major General William Gayler is a Distinguished Military Graduate of North Georgia College in Dahlonega, Georgia, where he was commissioned as an Aviation Officer in 1988.

Gayler's key command assignments include C/2-227th Aviation Regiment in Hanau, Germany; D/2-227th Aviation Regiment in Germany and Bosnia-Herzegovina; A/1-14th Aviation Regiment in Mesa, Arizona; 3-101st (Eagle Attack) Aviation Regiment in Fort Campbell, Kentucky, and Iraq; 101st Combat Aviation Regiment (Destiny) in Fort Campbell, Kentucky, and Afghanistan; Deputy Commanding General (Support), 7th Infantry Division, Joint Base Lewis-McChord, Washington; Director, Officer Personnel Management Directorate, Human Resources Command, Fort Knox, Kentucky; and Deputy Commanding General, U.S. Army Europe.

Gayler's key staff assignments include Aide-de-Camp to the Commanding General of the U.S. Army Aviation Center at Fort Rucker, Alabama; Battalion S3 and Executive Officer with 2-101st Aviation Regiment at Fort Campbell, Kentucky; Brigade S3 and Executive Officer with 101st Aviation Brigade at Fort Campbell, Kentucky; Deputy Director of the Directorate of Evaluations and Standardization at Fort Rucker, Alabama; Deputy G3 RESET Chief of the 101st Airborne Division (AASLT); and Chief of Staff, 101st Airborne Division (AASLT) at Fort Campbell, Kentucky.

Major deployment history includes Operation Desert Shield/Desert Storm, 1990-1991; Former Yugoslavia/Bosnia-Herzegovina, 1995-1996; Operation Iraqi Freedom I, 2003; Operation Iraqi Freedom V-VII, 2005-2006; and Operation Enduring Freedom X, 2010-2011.

Gayler holds two master's degrees, one in Military Arts and Sciences and one in National Security Strategy. Gayler is a graduate of the Command and General Staff College and the National War College.

Gayler's most recent assignment was Deputy Commanding General, US Army Europe. He is a Master Army Aviator and Standardization Instructor Pilot in the AH-64D Longbow Apache and also rated in the OH-58A/C Kiowa. His awards and decorations include the Distinguished Service Medal, Legion of Merit (3-OLC), Bronze Star Medal (2-OLC), Meritorious Service Medal (5-OLC), Air Medal (Numeral 6), Army Commendation Medal (2-OLC), Army Achievement Medal (1-OLC), Air Assault Badge, and the Combat Action Badge.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

NOVEMBER 9, 2017

RESPONSES TO QUESTIONS SUBMITTED BY MR. WILSON

Admiral SHOEMAKER. [No answer was available at the time of printing.] [See page 22.]

General RUDDER. This response is a coordinated Navy/Marine Corps team effort and is closely aligned with VADM Shoemaker's response. There is one additional depot effort to increase readiness not only for F/A–18 but also for all Marine Corps aircraft. The L–3 depot in Canada is being utilized to the maximum extent possible. There are currently 11 aircraft in-work at L–3 Canada. As of November 2017, one aircraft has been completed (Drive-In Mod work) and three high-flight-hour (HFH) aircraft are scheduled to complete in FY18. The assigned depot workload is coordinated between PMA–265 and CNAF (N421) and takes into account legacy requirements and the L–3 depot's contractual capability. The Legacy divesture effort greatly reduced the number of legacy hornets required to go through the depot. The health of our strike fighter fleet is a top priority within the Navy and Marine Corps, and the health of our industrial base is key to enabling us to achieve our readiness objectives. Workload is assigned to the organic and commercial depots following close coordination with Commander, Naval Air Forces and HQMC, based on current requirements and the depots' capacity to complete the work. Existing contracts with commercial depots have been performing as expected. There are currently 61 aircraft in work, and we expect approximately 77 completions throughout the remainder of those contracts. As a result, the backlog that previously existed (and which necessitated the use of commercial depot contracts) has been eliminated, with all aircraft inducted into the workflow. Recent reductions in the overall requirement, enabled by combining depot events (e.g. HFH inspections with Planned Maintenance Interval events), and the steady increase in capacity at organic Fleet Readiness Centers, have reduced the requirement for follow-on commercial contracts for F/A–18A/B/C/D depot-level maintenance since the forecasted requirement can be covered within existing organic depot capacities. The Department of the Navy is pursuing several other efforts to increase readiness and retain a healthy industrial base, including: Preparation of a competitive depot support solicitation for Fleet Logistics Center, Yokosuka, Japan, to help meet the requirements of forward deployed units. With a planned fiscal year 2019 award, the contract will have a base year and four one-year options. The work scope will be to perform approximately 11 depot inductions per year, for any F/A–18 type/model/series aircraft, and will include Planned Maintenance Interval activities, In-Service Repair, and aircraft modifications. Utilization of a Multi-Service Management Agreement (MSMA) for Contract Field Teams (CFT), an Indefinite Delivery/Indefinite Quantity (ID/IQ) contract managed by the Air Force. Under this competitive contracting approach, approved vendors compete for individual task orders, providing CFT to augment squadron and depot maintenance efforts to work down the backlog of aircraft awaiting maintenance and/or in-service repairs. CFT can provide on-site organizational, intermediate/field, and depot/sustainment level maintenance support at customer locations both in the continental United States, and abroad. This contract also includes Small Business set-aside requirements. This effort will be competed among six large business offerors using the Fair Opportunity Notice methodology outlined in the basic contract. Task orders requiring more than 100 Full Time Equivalent personnel are awarded to large businesses. Engagement with the U.S. Army, Communications-Electronics Command (CECOM), to use their R2–3G ID/IQ contract. The R2–3G contract provides access to 18 prime contractors and 1,100 sub-contractors. The contractors provide services including: technology insertion; system integration and installation; fabrication and prototyping; testing and certification; studies and analyses; and engineering, logistics, and training support. These services can be utilized in support of operational maintenance, repairs, preservation, and depot maintenance, and are a potential force multiplier for our overall readiness activities. Supporting a new Depot Readiness Initiative (DRI). This initiatives objective is to aid in the ability to more quickly return post Phased Depot Maintenance (PDM) aircraft to a flyable—mission capable status after its return to the Squadron. To achieve this end-state, this effort will utilize the available Depot capacity to complete some tasks that are typically organizational level maintenance requirements, while the aircraft is in

their specific PDM event. We believe this initiative will save time, while increasing both efficiency and readiness. This effort will begin with F/A–18 (A–D) with the intent to expand to all type model series aircraft in the Marine Corps. In closing, the Marine Corps is committed to utilizing all options to ensure F/A–18 readiness to support our COCOM and MAGTF Commander requirements, and remain committed to retaining a healthy industrial base. [See page 22.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

NOVEMBER 9, 2017

QUESTIONS SUBMITTED BY MR. WILSON

Mr. WILSON. It is my understanding that the Air Force intends to move its current government-owned contractor-operated (GOCO) J–85 engine repair facility from Laughlin AFB to a "to be determined contractor-owned contractor-operated (COCO) facility" in late 2019. Please explain the rationale for constituting a new J–85 repair facility at significant cost, during a pilot production crisis for an airframe that is scheduled to begin being taken out of inventory in 2024. Specifically, how does this solution address existing identified problems related to availability of government furnished parts and components, as well as ongoing engine transportation issues? Lastly, please let the committee know if the Air Force has studied the potential negative impacts of relocating the primary engine repair facilities for T–38s while it is confronted with significant pilot production shortfalls.

General NOWLAND. Overview: The J85 engine has been plagued with low time removals and poor reliability, resulting in negative impacts to engine availability. The USAF's acquisition strategy is based on securing the services of an experienced Engine Maintenance, Repair, and Overhaul (MRO) contractor to improve engine reliability and availability to meet current and future pilot production requirements.

Extensive market research indicates performing the workload at a contractor owned facility will create a competitive environment amongst experienced engine MRO contractors resulting in the best value for the USAF's requirement. Market research also indicates no competitive engine MRO contractor environment exists if the workload remains at Laughlin AFB. Historically, the vendors who have competed for the workload at Laughlin AFB are labor service providers—not engine MRO contractors.

Q1. Please explain the rationale for constituting a new J–85 repair facility at significant cost?

A1: Based on the USAF's cost estimate for engine MRO services at a contractor owned facility, we anticipate the price per engine to be roughly double the cost of a labor services contractor at a government owned facility. This estimate includes the initial start-up costs, spread through the contract period of performance. Direct cost comparisons are misleading, however, as the requirements between the current and future contracts are not the same and the costs of the government owned facility are not included in the current contractor's costs. Because the past strategy of using labor service contractors to conduct on-condition maintenance has resulted in extensive low time removals and poor reliability, the USAF developed the current strategy to use an MRO contractor with a focus on reliability centered maintenance to improve engine availability at a time of increased pilot production. Extensive market research indicates performing the workload at a contractor owned facility will create a competitive environment amongst experienced engine MRO contractors resulting in the best value for the USAF's requirement. Market research also indicates no competitive engine MRO contractor environment exists if the workload remains at Laughlin AFB.

Q2. Please explain the rationale for constituting a new J–85 repair facility during a pilot production crisis for an airframe that is scheduled to begin being taken out of inventory in 2024.

A2: Air Education and Training Command (AETC) intends to fully divest the T–38 by the early 2030s. However, Air Combat Command, Air Force Materiel Command, NASA, and the USN will continue to fly beyond that date. Additionally, Foreign Military Sales countries, which represent the largest J85 users in the world, can also leverage this contract to address their engine overhaul requirements. Consequently, J85 engine support will be required beyond AETC's divestment in the early 2030s. AETC's intention to cease T–38 operations further substantiates the movement of this workload out of an AETC operated facility for the remaining J85 user community. The USAF does not have a cost savings analysis but has considered cost in its strategy. Accordingly, competition, contract incentives, and increased engine reliability are elements in the USAF's strategy to minimize costs. Further, direct cost comparisons are misleading as the requirements between the current and future contracts are not the same. Overall, the USAF's objective is to improve engine reliability and availability to meet current/future pilot production requirements

at the best value. To ensure the most reliable, available, and affordable engine is made available for all warfighting customers, the USAF intends to secure the best value outcome from an MRO contractor through the power of competition.

Q3. Specifically, how does this solution address existing identified problems related to availability of government furnished parts and components, as well as ongoing engine transportation issues?

A3: Engine transportation scheduling issues are not adversely affecting production at the Engine Regional repair Center. However, market research indicates engine MRO service providers interested in competing for this workload are located in urban/industrial areas, where transportation is readily available. Further, the FY15–FY17 average J85 engine non-mission capable for supply (ENMCS) rate is 5%, well below the Chief of Staff of the Air Force established requirement of no more than 20%. While supply can limit production, rates at this level do not explain the engine backlog or lack of production at the ERRC when compared to other comparably supply constrained fleets. Unlike labor service providers, engine MRO providers are well experienced in supply mitigation practices, including reuse and repair of parts, cannibalization of parts between engines, implementation of reliability centered maintenance, robust supply forecasting practices, etc. Additionally, requiring and incentivizing increased reliability from an engine MRO contractor will keep engines on wing and in the field longer, reducing the aggregate supply burden and ensuring current and future pilot production requirements are met.

Q4. Lastly, please let the committee know if the Air Force has studied the potential negative impacts of relocating the primary engine repair facilities for T–38s while it is confronted with significant pilot production shortfalls.

A4: To minimize transition risk, AETC has already increased the annual production requirement to provide additional spare engines, and alternative sources of engine repair will be used as needed. Additionally, the USAF's strategy calls for the winning bidder to continue operations at Laughlin AFB for a year, allowing establishment of J85 expertise and an orderly transition of both equipment and personnel to the contractor facility without delaying repairs or impacting pilot production.

The increase in reliability of J85 engines resulting from the use of an MRO contractor will enable current and future T–38 pilot production requirements to be met. Conversely, the past strategy of using labor service contractors to conduct on-condition maintenance has resulted in extensive low time removals and poor reliability, negatively impacting engine availability and driving USAF's current strategy to use an MRO contractor with a focus on reliability centered maintenance.

Mr. WILSON. Please discuss the current status of Class A, B, C mishap rates, underlying causes, trends observed in aviation safety and your observations on readiness impacts to mishaps? What steps are you taking to mitigate readiness impacts on aviation safety? Indications are that Class C/Ground mishaps are on a sharp incline, what actions is your service taking to address this increase and are there any early indications of common factors?

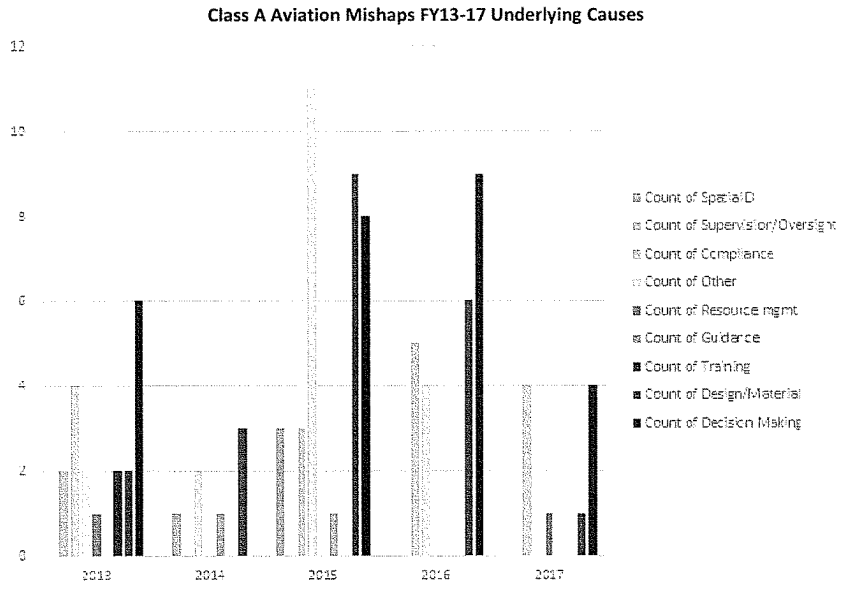
General NOWLAND. Any damage or injury to Air Force equipment and personnel could have potential readiness impacts; however, lack of readiness has not been correlated to causality in aviation mishaps. Overall trends from FY13 through FY17 highlighted compliance and decision-making as trend items in both Class A and B aviation mishaps.

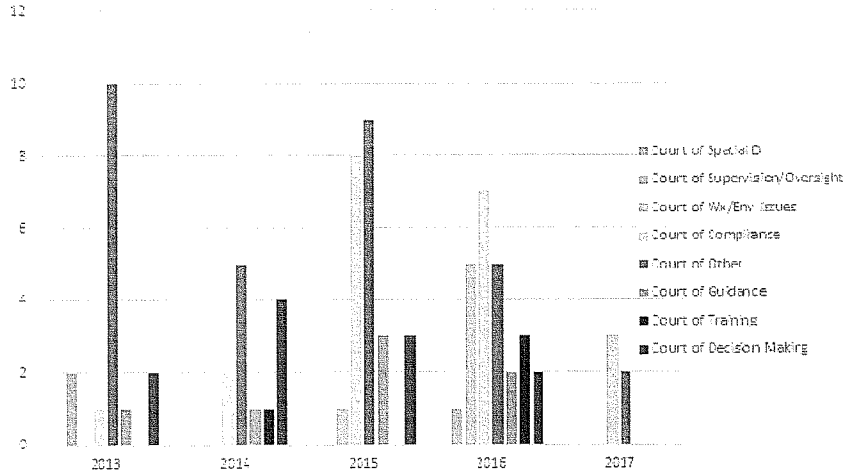
Mitigation strategies to address these trends include continuous messaging from HQ Air Force and Major Commands as well as targeted recommendations to improve guidance, technical orders, training, and oversight of flight and flight line operations. In addition, since FY13 the Air Force implemented 6,941 aviation safety investigation recommendations and is currently working towards implementing 2,055 additional safety investigation recommendations.

The following table illustrates the last 5 years of AF aviation safety mishaps:

Category	FY13	FY14	FY15	FY16	FY17	FY18 [to date]
Class A: Flight (# mishaps / rate per 100k fly hrs)						
Manned	19 / 1.1	7 / 0.4	20 / 1.2	12 / 0.7	12 / 0.8	1 / 0.4
Unmanned	12 / 3.2	12 / 3.2	16 / 4.0	11 / 2.8	9 / 2.2	0 / 0.0
Class A: Flight Related (# mishaps)						
Manned	1	2	1	2	1	1
Unmanned	0	0	0	0	0	0
Class A: Aviation Ground Operations (# mishaps)						
Manned	1	3	0	3	5	0
Unmanned	0	0	0	0	0	0
Class B: Flight (Class A: Flight (# mishaps / rate per 100k fly hrs)						
Manned	32 / 1.9	37 / 2.3	36 / 2.1	42 / 2.6	35 / 2.2	1 / 0.4
Unmanned	1 / 0.3	1 / 0.3	2 / 0.5	1 / 0.3	1 / 0.2	0 / 0.0
Class B: Flight Related (# mishaps)						
Manned	0	2	0	0	0	0
Unmanned	0	0	0	0	0	0
Class B: Aviation Ground Operations (# mishaps)						
Manned	13	14	9	14	6	3
Unmanned	0	0	0	0	1	1
Class C: Flight (# mishaps / rate per 100k fly hrs)						
Manned	264 / 15.7	289 / 18.1	290 / 17.3	278 / 17.2	335 / 21.1	14 / 5.5
Unmanned	11 / 3.0	15 / 4.0	22 / 5.5	14 / 3.6	24 / 5.8	2 / 3.1
Class C: Flight Related (# mishaps)						
Manned	30	24	29	27	19	3
Unmanned	0	0	0	0	1	0
Class C: Aviation Ground Operations (# mishaps)						
Manned	298	319	312	324	339	20
Unmanned	5	2	3	3	5	0

The following tables illustrate the underlying causes of Air Force aviation Class A and B mishap investigations FY13–17 (note: mishaps may have more than one cause):





During the period FY 2013–2017, both on- and off-duty ground Class C mishaps actually decreased in the Air Force (see table below). Off-duty mishap counts decreased 21% and on-duty mishap counts decreased 24%. These decreases occurred steadily over the 5-year period, suggesting that the decrease is not due to any one factor, and is not a statistical fluctuation.

Since both on- and off-duty mishaps are reportable, the causes and risk factors in ground mishaps vary greatly. The Air Force has pursued the following recommendations based on analysis of injury types and methods:

- Head protection for maintenance personnel—first in hangars and then on the flight line

- Stronger fall protection at all locations
- Buddy lifts, hoists and other mechanized lifts to decrease lifting injuries

Ground Class C Mishaps by Duty Status, FY 2013-2017

Status	2013	2014	2015	2016	2017	Total
Off Duty	2083	2004	1799	1742	1639	9267
On Duty	1416	1362	1248	1186	1074	6286
Total	**3499**	**3366**	**3047**	**2928**	**2713**	**15553**

Mr. WILSON. Please discuss the current status of Class A, B, C mishap rates, underlying causes, trends observed in aviation safety and your observations on readiness impacts to mishaps? What steps are you taking to mitigate readiness impacts on aviation safety? Indications are that Class C/Ground mishaps are on a sharp incline, what actions is your service taking to address this increase and are there any early indications of common factors?

Admiral SHOEMAKER. [No answer was available at the time of printing.]

Mr. WILSON. In July, a Marine Corps KC–130T crashed during a routine flight, killing fifteen Marines and one sailor. The Navy and Marine Corps immediately grounded all "T" model aircraft—23 Navy and 12 Marine Corps planes—while investigators determined the cause of the crash. I understand that most, if not all, of these aircraft are still grounded and that their return to operational status is being hindered in part due to limited maintenance capacity. It's our understanding that the services have had to shift work among maintenance facilities and personnel to accommodate the introduction of the Joint Strike Fighter into their fleets. As a result, some older platforms—like the C–130—must rely on a single source for maintenance and repair work. While I understand that routine, planned and priority aircraft often receive adequate support, relying on a single source can understandably make it far more difficult to handle work of an unscheduled or unpredictable nature—particularly when the maintenance facilities and personnel are already facing a full load of regular-scheduled work under increasing operations tempo. Please provide a status update on maintenance and repair work for the Navy C–130 and Marine Corps KC–130 fleets.

Admiral SHOEMAKER. [No answer was available at the time of printing.]

Mr. WILSON. In light of a situation wherein certain work can currently be performed at only one location, what steps is the Navy aviation community taking to ensure that unscheduled and unpredictable work can be completed as quickly as possible? If industry can offer additional capacity in times of great need, do you see opportunities for the Department of the Navy to leverage this capability to address unscheduled maintenance and repair work, which would in turn enable the current organic depots the ability to focus on its routine, planned and priority aircraft?

Please address the current and forecasted impacts to Navy, Marine Corps, Navy Reserve, and Marine Corps Reserve aviation readiness due to the grounding of the C–130 fleet and timeline to effect the required repairs.

Admiral SHOEMAKER. [No answer was available at the time of printing.]

Mr. WILSON. Please discuss the current status of Class A, B, C mishap rates, underlying causes, trends observed in aviation safety and your observations on readiness impacts to mishaps.

General RUDDER. As I testified before the HASC-Readiness committee on 9 November 2017, while there is no single, direct link between low readiness rates and high Class A mishaps this year, it has my highest attention. There is no question that naval aviation is an inherently dangerous discipline, and we cannot discount the second and third order effects of low readiness and lack of training repetitions. Every mishap is unique. The Marine Corps conducts thorough investigations to learn from each mishap and attempt to prevent future mishaps. Our aircraft are safe and our training and readiness manuals are refined to ensure that aircrew meet prerequisites for demanding flights. 15 years of war has not led to a rise in severe mishaps. The Marine Corps averaged 12.6 class A mishaps per year (a rate of 3.3) from FY02–06, 7.5 class A mishaps per year (a rate of 1.9) from FY07–FY11, and 8.8 class A mishaps per year (a rate of 3.0) from FY12–FY17. Unpredictable funding, late budget allocations, and a habitual pattern of relying on Continuing Resolutions continue to have a significant negative impact on training, force generation, and readiness. Additionally, the effect of inconsistent funding will likely have an even greater toll on procurement of future systems, which creates uncertainty for future readiness. Gaps in funding require leaders to make hard choices to prioritize manning, equipment transfer, and application of training dollars. I prioritize support to the operationally deploying units to the detriment of force generation and unit level training. Lost training time, and regaining readiness genera-

tion for skilled aircrew cannot be accomplished without additional resources in the future. Taking assets and funding away from other portions of the Fleet to ensure that deploying elements have everything they need creates preventable risk. Unpredictable funding creates a climate where commanders have to choose between requirements, rather than choosing the order in which to accomplish all requirements. As I testified to before, these risk choices have a ripple effect on many facets of readiness for units, which will continue for years.

Mr. WILSON. What steps are you taking to mitigate readiness impacts on aviation safety?

General RUDDER. Flight hours are the ultimate metric for a well-trained, disciplined, professional force. Flight hours are measured in hours per crew per month and form the foundation for aircrew to fly our training plan and be a ready force. A healthy squadron is able to build readiness for combat by properly maintaining aircraft, and by building aircrew proficiency through flight hours and realistic training. Flying anything less than the training requirement jeopardizes readiness. There are several prioritized initiatives Marine Aviation implemented as part of our comprehensive readiness recovery plan.

Properly-funded enabler accounts: In PB18, the Marine Corps funded its readiness enabler accounts to the maximum executable and unprecedented levels. For example, from 2007 to 2016 our spares accounts were funded to 76%; in PB18 we increased this to 96%. However, CRs continue to prevent us from realizing the benefit of this increase—we can't make long-term investments, increase production rates or start new programs until we have full-year funding.

Manpower Initiatives: Healthy readiness is generated from properly resourced aircraft maintenance and sufficient aircrew flight hours. None of this is achievable without a well-trained and experienced aircraft maintenance force; therefore, we are heavily investing in enlisted maintainers to rebuild a healthy and effective maintenance base. Talent preservation is a critical part of this equation for Marine Aviation to improve readiness. Last year, we identified an experience gap at some of our maintenance supervisor levels as a byproduct of the most recent force reduction. In FY18 the Marine Corps, for the first time, has initiated an "Aircraft Maintainer Kicker" as part of a Selective Retention Bonus to retain our most highly-qualified and experienced maintainers. To date, 447 eligible Marines have accepted the retention bonus—that's 447 highly-qualified aircraft maintainers who are on the flight line TODAY that otherwise would not have been (e.g. PCS move, separation, etc.). In addition to this, we are exploring an adjustment to the overseas tour lengths to ensure forward-deployed units have the right people in the right place.

Maintenance Initiatives: A key initiative is to utilize the depot-level to help reduce the maintenance burden in our operational units. This initiative will help optimize the maintenance workload between the depot-level and unit-level maintenance schedule (beginning with the legacy F/A–18s) in order to allow the operational unit to focus their efforts on its properly apportioned aircraft inventory. Depots will begin performing more organizational-level maintenance (e.g. phase inspections, technical directives, etc.) at the depots to ensure when aircraft return from the depot the aircraft can be inspected and returned to the flight schedule sooner. The Marine aircraft maintainer will be the true benefactor of this initiative because this allows the unit-level maintainers to properly maintain their assigned aircraft on their flightline rather than devoting excessive maintenance-man-hours to a post-depot aircraft that typically takes many months to return back to the training schedule.

Supply Initiatives: Supply of parts has been a challenge to Marine Aviation readiness. In an effort to make our process proactive and gain efficiency, we are adopting an Air Force supply program (Customer Oriented Leveling Technique/Proactive Demand Leveling—or COLT/PDL) that is designed to stock more parts in both depth and breadth. The current Navy/Marine system uses demand analysis for allowancing management, while COLT uses marginal analysis to determine the most advantageous composition of stock allowances to reduce total number of backordered parts over time. Using COLT/PDL, when a part breaks, it will generate an allowance increase for all end-use supply locations simultaneously—regardless of where the part was physically needed. In practice, when one supply center orders a specific part, that same part is preemptively ordered for ALL supply centers, rather than wait for the same part to break on a different aircraft in a disparate location. Performance-based logistics (PBL) contracts is another method being applied on a limited-basis for explicit repairable components (e.g. gearboxes, rotor blades, drive-train components) with certain type/model/series aircraft. In essence, we pay "up-front" for a definite parts availability rate (e.g. 95%) from the vendor. PBLs benefit the customer by incentivizing the vendor to improve component reliability, or,

at a minimum, improve its availability in the system, thereby enabling increased readiness.

Mr. WILSON. Indications are that Class C/Ground mishaps are on a sharp incline, what actions is your service taking to address this increase and are there any early indications of common factors?

General RUDDER. These ground-related mishaps are preventable and require the attention of all professional aviators and maintainers. During FY17 there were more than 70 aviation mishaps reported to Headquarters Marine Corps. More than 50 of these were Class C mishaps, many of which were ground-related mishaps. Collectively, these mishaps resulted in the loss of mission capable aircraft available to contribute to combat readiness. This upward trend in Class C mishaps prompted us to initiate the Aviation Related Ground Mishap (ARGM) Independent Readiness Review. The ARGM IRR identified root causes and delivered actionable recommendations that enable Marine Corps Aviation to address and reduce the aviation ground mishap rate, preserve aviation assets, and fulfill its training and readiness requirements. The study found that the rise in aviation ground mishaps is a consequence of a less-than optimal maintenance culture shift engendered by post-9/11 high tempo operations and are one of many variables that are depressing Ready Basic Aircraft rates in Marine Corps aviation. The ARGM IRR identified 44 recommendations from which Marine Aviation developed 54 actionable initiatives to address the ARGM findings. To date, roughly 45% of these initiatives are either complete or ongoing, and we will continue to refine and implement the safety initiatives over the next 12 months. Examples include:

Standardization of Aircraft Towing/Movement: Enhanced Wing-level aircraft towing training and supervision is required prior to the movement of any aircraft. We have implemented standardized "spot check" inspections across the Marine Aircraft Wings (MAWs). MAW inspections and grading criteria for standardization is under review and refinement. In addition, we have implemented a new standardized grading criteria for all maintenance programs to improve institutionalized program compliance across Marine aviation.

Advanced maintenance management and compliance training: Marine Aviation developed the Advanced Aircraft Maintenance Officer's Course (AAMOC) in FY16. The first two classes of Aircraft Maintenance Officers graduated the course during FY17. We have also developed the Advanced Aircraft Maintenance Management Training (AAMT) for our more senior enlisted maintenance Marines, along with the Aircraft Maintenance Management Center of Excellence at the Marine Aviation Weapons and Tactics Squadron-1 (MAWTS–1) Squadron. To summarize, we are evolving the maintenance community culture by refocusing our Marines on better supervision, standardization, advanced maintenance training and best practices. We are re-enforcing a mindset of maintaining and grooming aircraft as we build a healthy and experienced maintenance base capable of generating the required readiness for combat.

Mr. WILSON. In July, a Marine Corps KC–130T crashed during a routine flight, killing fifteen Marines and one sailor. The Navy and Marine Corps immediately grounded all "T" model aircraft—23 Navy and 12 Marine Corps planes—while investigators determined the cause of the crash. I understand that most, if not all, of these aircraft are still grounded and that their return to operational status is being hindered in part due to limited maintenance capacity. It's our understanding that the services have had to shift work among maintenance facilities and personnel to accommodate the introduction of the Joint Strike Fighter into their fleets. As a result, some older platforms—like the C–130—must rely on a single source for maintenance and repair work. While I understand that routine, planned and priority aircraft often receive adequate support, relying on a single source can understandably make it far more difficult to handle work of an unscheduled or unpredictable nature—particularly when the maintenance facilities and personnel are already facing a full load of regular-scheduled work under increasing operations tempo. Please provide a status update on maintenance and repair work for the Navy C–130 and Marine Corps KC–130 fleets.

General RUDDER. Introduction of the Joint Strike Fighter and other new platforms have had minimal impact on the downing, repair and maintenance of the Marine Corps KC–130T Fleet. The Department of the Navy has an inter-service agreement with the Air Force to conduct all Navy and Marine Corps C/KC–130T propeller overhauls at Warner-Robbins Air Force Base (AFB). The Aircraft Mishap Board (AMB), which is ongoing, discovered inconsistencies within the maintenance process at Warner-Robins AFB. As a result, the U.S. Air Force initiated a pause in production and an overhaul of propellers. This is expected to last at least through mid-January 2018. The Marine Corps' ability to resume KC–130T flight operations is contingent upon the Air Force adequately resolving their process and quality issues in order

to resume propeller production and overhauls. The second subject is in regards to depot maintenance capacity at Hill AFB, Utah. The Air Force is dedicating Hill AFB to F–35 depot work and transitioning all C–130 depot activity to Warner-Robins AFB, Georgia, where Periodic Maintenance Interval (PMI) for Air Force C–130s is performed. This transition is scheduled to begin in FY18. However, there are multiple alternate locations that can perform unscheduled or unpredictable depot maintenance on C–130s. For example, unscheduled depot maintenance is performed by Cherry Point Fleet Readiness Center, Hill AFB artisans and Warner-Robins AFB expeditionary maintenance teams.

Mr. WILSON. In light of a situation wherein certain work can currently be performed at only one location, what steps is the Navy aviation community taking to ensure that unscheduled and unpredictable work can be completed as quickly as possible? If industry can offer additional capacity in times of great need, do you see opportunities for the Department of the Navy to leverage this capability to address unscheduled maintenance and repair work, which would in turn enable the current organic depots the ability to focus on its routine, planned and priority aircraft?

Please address the current and forecasted impacts to Navy, Marine Corps, Navy Reserve, and Marine Corps Reserve aviation readiness due to the grounding of the C–130 fleet and timeline to effect the required repairs.

General RUDDER. We anticipate that it will take over a year to fully return all grounded Marine Corps KC–130T aircraft to service. The propeller overhaul process is the only process that is currently being performed at one location: Warner Robbins Air Force Base (AFB). Unscheduled maintenance and repair work is organic through the Warner Robins AFB Depot and contracted through Pacific Propeller International LLC (PPI). United Technologies Aerospace Systems (UTAS) is the sole manufacturer of new blades, which are sent to Warner Robbins AFB and PPI for assembly. UTAS has agreed to increase production until the Department of the Navy is able to return all aircraft to service. Consequently, the Department will use a combination of Warner-Robbins Depot work and PPI overhaul and production of new propeller blades to return the Fleet to operational capability. Addressing general Depot work, the Department utilizes all resources available to perform depot work both organically and commercially. As for the impact on operations of the Marine Corps Reserve KC–130T fleet, we currently have two operational aircraft and expect one more aircraft to be returned to flying status by December 12, 2017. For the remainder of the KC–130T fleet, we anticipate approximately six more KC–130Ts to be operational by May 1, 2018 and all USMC KC–130T aircraft (12 total) operational by February 2019.

Mr. WILSON. The latest projections for rebuilding readiness are based on setting the conditions for readiness recovery. Could you please provide examples of the fragility of recovery efforts, how fiscal year 2017 funding has shown results in recovering readiness, and how the fiscal year 2018 will further readiness recovery. Where are additional resources still required?

General GAYLER. For Army Aviation, force structure reductions as a result of the Budget Control Act and Sequestration require us to balance three difficult and often competing risks every single day—meeting today's high level of global commitments, building and maintaining readiness for high intensity conflict scenarios, and modernizing the force for the future. Each of these competing risks impact Army Aviation readiness. For example, reduced force structure and today's high commitment levels for Army Aviation significantly challenge our ability to incrementally modernize or upgrade aircraft for real-world requirements. This results in a reduction of aircraft available for training to operational units, which directly challenges our units' ability to train and build readiness. Furthermore, reduced, unpredictable, or unavailable funding limits our ability to field units with updated equipment such as Aviation Survivability Equipment. This is due to our requirement to prioritize delivery to deploying units only, which hampers training with these systems across the operational force. While we are making progress in building readiness, it will take time and predictable and sustained resourcing to get us back on course.

Fiscal Year 2017 funding and the Request for Additional Appropriations (RAA) did provide additional resources which were used to procure additional aviation platforms such as UH–60M, AH–64E, and Gray Eagle Unmanned Aircraft Vehicles. Additionally, we were able to commit resources to Assured Positioning, Navigation, and Timing and several Aviation Survivability Equipment needs for active theaters. However, operating under a continuing resolution for two-thirds of 2017 still hampered readiness efforts particularly in two areas: modernization and aviation maintenance. Funding via continuing resolutions continues to place major modernization programs largely on hold, as funds are not available for these critical modernization efforts.

Furthermore, continuing resolutions and incremental funding hamper our ability to maintain equipment readiness, as it often results in highly variable and unpredictable demand for aviation parts. This impact is felt at the unit level where limited funds can restrict the purchase of large dollar aviation parts, which results in deferred maintenance practices. Deferring maintenance directly reduces the number of aviation platforms available for training, which hampers readiness efforts.

Lastly, while it is important to note that funding levels are important to Army Aviation's rate of readiness recovery, a return to predictable and sustained resourcing is more essential to ensure that our recovery is continued and enduring.

Fiscal Year 2018 accounts are programmed to receive increased funding from Fiscal Year 2017 levels, and this level of resourcing will improve our readiness recovery. Fiscal Year 2018 flying hour accounts are funded at 10.6 flight hours per crew per month for the Active Component, 7.0 hours for the Army National Guard, and 6.5 hours for the U.S. Army Reserves. Of note, this fiscal year will bring the start of a three-year period of increased Aviation Warrant Officer accessions and flight school aviator qualifications to generate increased manning to the operational force. This critical effort will help alleviate the current shortages of Aviation Warrant Officers and enhance readiness over time.

Current funding levels for Army Aviation flying hour programs are sufficient to produce platoon-level proficiency which is appropriate for counterinsurgency operations in relatively permissive environments. As we continue to build readiness and maintain a focus on potential adversaries, we will ask for your support to further resource flight hour programs to allow Army Aviation units to build and maintain proficiency at the company and battalion level—a level of proficiency that we must provide our Soldiers to remain prepared for potential large scale combat operations.

Mr. WILSON. Please discuss the current status of Class A, B, C mishap rates, underlying causes, trends observed in aviation safety and your observations on readiness impacts to mishaps? What steps are you taking to mitigate readiness impacts on aviation safety? Indications are that Class C/Ground mishaps are on a sharp incline, what actions is your service taking to address this increase and are there any early indications of common factors?

General GAYLER. Over the past four decades, the Army has dramatically reduced the major aviation accident rates. The Army Aviation Class A accident rate for Fiscal Year 2017 was 25% below the ten-year average rate with Class B and C accident rates consistent with ten-year averages. Human error remains the leading causal factor in aviation mishaps. In fact, consistent with accidents throughout the broader aviation community and historical averages, 76% of all Class A accidents in Fiscal Year 17 were determined to be a result of human error. Fiscal Year 2017 rates:

Class A: .99 accidents per 100,000 flight hours; 10-year rate = 1.33
Class B: 1.24 accidents per 100,000 flight hours; 10-year rate = 1.26
Class C: 5.57 accidents per 100,000 flight hours; 10-year rate = 5.27

In a continuous effort to mitigate risk to aviation operations, we identify and monitor several trends that have been prevalent in our recent aviation mishaps. The first mishap trend centers on an increase in flight training conducted at low altitudes, as these operations have inherently higher risk than high-altitude flight. Aviator proficiency maneuvering at low-altitudes is essential to defeating the significant radar threats we anticipate in any future high intensity conflict. Second, high intensity conflict scenarios require collective-level proficiency beyond platoon level—a level that was more appropriate for counterinsurgency operations. In shifting our training focus to high intensity conflict environments, we add complexity to mission training as it must be executed at echelons above the team and platoon level.

We have not witnessed any direct correlation between readiness levels and aviation mishap rates. We have, however, experienced a decline in flight hours executed over the past several years. While we cannot draw a direct correlation between reduced flight hours and our current mishap rates, I share the sentiment recently expressed by Secretary Mattis when he commented that it would be "hard to believe that we could reduce flying hours and not have a less capable force."

Army Aviation units mitigate risk consistent with the manner practiced by the greater Army community—through engaged and decisive leadership. However, rigorous and realistic training conducted repeatedly is the single greatest risk mitigation that leaders can provide their Soldiers, as it results in improved aviator proficiency and confidence and produces higher readiness levels. We remain focused on several efforts that will enable units to more effectively train their formations and improve their overall readiness which, in turn, should positively impact unit safety.

First and in line with recommendations made by the Holistic Army Aviation Task Force (HAATF) assessment, we are implementing several initiatives to improve Army Aviation maintenance. Institutionally, we have developed a standardized Avi-

ation Maintenance training program and also refined the roles and requirements of aviation maintainers, two efforts that will positively impact aviation readiness. Additionally and also consistent with HAATF recommendations, we are improving our maintenance storage facilities to reduce corrosion effects on aviation parts. These efforts will translate into higher aircraft operational readiness rates over time and provide units with more aircraft available for training, thus improving readiness across the force.

A second institutional effort to highlight centers on improving training throughput at Fort Rucker to increase the annual production of Army Aviation Warrant Officers (an over 25% increase over the next three years). This initiative will help reduce manning shortages across the operational force to better enable training and improve overall readiness across the force.

2017 Army Aviation Class C mishap rates were slightly above the ten-year average. We did not, however, observe any significant common factors regarding these mishaps. As a branch, Army Aviation is mitigating this risk through executing rigorous and realistic training with increased frequency.

Fiscal Year 2017 saw an increase in on-duty Class A ground mishaps from the previous year, while experiencing a decline in overall fatalities. Overall, Class A on-duty ground mishap rates have remained relatively constant over the past five years, while Soldier on-duty ground fatalities were the lowest over the past five years. Operating or riding in a motor vehicle produces the highest number of Class A ground mishaps and also results in the most on-duty Soldier fatalities. We continue to mitigate this risk through engaged and decisive leadership at all leader levels throughout our formations.

QUESTIONS SUBMITTED BY MRS. HARTZLER

Mrs. HARTZLER. Just last week it was reported that several drones were observed over Whiteman Air Force Base. Recently the A–C–C commander General Holmes stated the need for the authority to better defend against small drones. Even these small drones could cause significant damage or worse, the loss of one of our Airmen and the aircraft. I am wondering how the Air Force is perceiving and addressing this problem.

a. Have there been any other instances of near collisions between small UAS and Air Force aircraft?

b. Do you see this as a potential impact to flying operations and readiness?

c. Do you think the Air Force has the proper authorities and equipment to detect, track, monitor, and mitigate this threat to our national assets?

General NOWLAND. My counter small UAS team is available to meet with your staff to discuss any of these issues in greater detail in a classified environment. The Air Force perceives the emergence of small drones as both a force protection and a flight safety concern. As such we have stood up a team to examine, develop and coordinate solutions across the Air Force and in collaboration and coordination with our Sister Service and Interagency partners.

Have there been any other instances of collisions or near collisions between sUAS and Air Force aircraft?

Drone operations (small Group 1 or 2 unmanned aerial systems weighing less than 55 pounds, aka sUAS), remain a concern for Air Force operations and flight safety. Within the last year, we have taken measures to increase awareness and improve reporting through various public affairs initiatives and policy guidance. As such, we are seeing an increase in reports and sightings around airfields and air operations. We think this is a combination of increased proliferation throughout the general populace, ideal operating environments around airfields, and increased emphasis on reporting. As for specific instances of collisions with Air Force aircraft, we have been very fortunate not to experience any. However, our sister service (Army) had at least one collision incident with a helicopter that we know of in New York. There are several instances where drones have affected our ability to conduct operations. Although our interagency partners, especially the Federal Aviation Administration (FAA), have been very supportive of the Air Force with the establishment of Special Security Instructions and Temporary Flight Restrictions over Air Force installations and Congress is supportive of the Air Force's national defense functions, the legislative restrictions, authorities, and enforcement options have not completely curtailed incidents. The most recent incident was at Whiteman AFB, MO where a couple of drones were observed during a national level exercise which resulted in precautionary measures that delayed operations for several hours. Other incidents of drones impacting flight operations are at our flight training bases.

Do you see this as a potential impact to flying operations and readiness?

Yes. The impact to flying operations is consistent across both the military and civil operations especially in vicinity of airports and airfields. The safety issue, although a FAA responsibility, impacts the most critical phases of flight, specifically takeoff and landing. Unfortunately, the ability to regulate and enforce the approach and departure corridors is a subject the interagency and the Department recognize as an important issue but we are awaiting FAA guidance on how to enforce and enhance airspace integrity and flight safety. The Air Force has been focused on protecting assets and resources within our installation boundaries. As such the FAA has effectively collaborated with the Air Force and Department of Defense as a whole to establish special security restrictions, prohibiting drone operations within military installation boundaries.

Do you think the Air Force has the proper authorities and equipment to: detect, track, monitor, and mitigate this threat to our national assets?

Authorities: The Air Force appreciates Congressional support to expand appropriate 10 USC 130i authorities to all of our installations and bases. We are thankful that Congress expanded Department of Defense authorities through the FY18 NDAA by including additional covered missions such as Special Operations; Major Test and Range Facility Bases; Air Defense; Presidential Support; and Critical Infrastructure. However, there is still a gap that will need to be addressed, involving vital Air Force missions, such as airlift and training (at our pilot training bases, for example). The Air Force and the Department of Defense appreciates Congressional support to ensure "hobby drone" consumers and operations are aligned to meet more stringent FAA guidelines (such as revised definitions and delineations between manned and unmanned aircraft and those guidelines imposed on "commercial drone operators", such as Amazon) in order to ensure flight safety, especially in the vicinity of active flight operations. Our overseas locations are limited in similar, complex ways and that varies country to country based on international agreements and host nation policies. NOTE: Whiteman AFB is covered by current legal authorities under 10 USC 130i.

Equipment: Our Air Force is working to rapidly acquire commercial-off-the-shelf technologies to fill those equipment requirements. We have prioritized our most urgent missions at home and abroad to receive the first technologies and available systems. From there, we will continually evaluate industry innovations for scalable, cost-effective solutions that meet Air Force needs and can adapt to an evolving threat. Due to complex legal and policy restrictions at most installations at home and abroad, the technologies often required to accomplish tracking and mitigation could exceed our current ability to employ them, so we are taking a methodical approach to fielding systems.

Mrs. HARTZLER. We talk frequently about the fighter pilot shortfall, but we don't discuss the manning shortfalls in the bomber community. I am proud to have Whiteman Air Force Base in my district, which is the model example of the Air Force's Total Force Integration. It is home to both active and guard bomb wings that work side-by-side on a daily basis. Despite the active and guard integration, they are still facing manning shortfalls. We see the shortfalls not only among the pilots, but among the maintainers. These are the individuals who work hard to ensure the B–2 maintains its L–O capability. In order to keep up with the high demand for the B–2, the men and women at Whiteman are working smarter and staying resilient.

What is the Air Force doing to address this manning shortfall?

General NOWLAND. Our pilot shortage is most severe in the fighter community (1,005 RegAF/1,276 TF). By comparison, we are short 135 bomber pilots (135 RegAF/158 TF). That represents an overall RegAF manning of 73% (fighter pilot) and 85% (bomber pilot). Although bomber pilot manning is better than fighter pilot manning, we are concerned that bomber pilots experienced a more significant % drop in manning inventory in FY17 than the fighter pilot inventory. Whiteman AFB maintains pilot manning at 98–100% manning throughout the year, and do to the sensitive and unique nature of B–2 operations, typically enjoys better manning than other bomb squadrons throughout the Air force.

Furthermore, to address the overall shortfall, the Aircrew Crisis Task Force has seven ongoing lines of effort working solutions that address pilot requirements, accessions, production, absorption, retention, sortie production, and industry collaboration to address what we believe is the leading edge of national pilot shortage. Specifically, the pilot shortage requires careful coordination across the service to increase our ability to produce more pilots without creating bottlenecks in the pipeline. In the near term, the Air Force must retain aviators to grow its future force, but the only way to recover from the pilot shortfall is to produce more pilots by increasing the capacity of the production pipeline.

Mrs. HARTZLER. What is the Air Force doing to ensure that we not only have enough bomber pilots and maintainers, but that we are able to retain these highly skilled individuals?

General NOWLAND. Bomber pilots will benefit from the 66 different retention initiatives the Air Force is currently working to improve quality of service, work/life balance, and monetary compensation for aircrew members. For example, each Whiteman AFB bomb squadron gained 5 administrative contractors in November 2017 to execute scheduling, deployment management, training, and other key functions that are critical to the mission but do not require pilot expertise to accomplish. This action decreases the amount of time the pilots have to remain at the squadron and allows them to recapture some of the white space on their calendar and make investments in personal development. We believe initiatives like these will allow us to improve upon the 44% FY17 bomber pilot aviation bonus "take rate" in the coming years.

As for maintainers, we were approximately 4,000 aircraft maintainers short a couple years ago. Thanks to approval from Congress to grow our end strength, we've been able to largely recover from that deficit and are only short 400 maintainers today. Although it will take 3–5 years for these maintainers to achieve the desired experience levels to be considered "healthy" again, having more hands to do the work will have a dramatic impact on the retention of existing maintenance personnel.

Despite our best efforts, retention of highly skilled personnel will continue to be a challenge due to the size of our force, the unrelenting demand for airpower around the world, and the draw of higher pay and stability that comes from civilian life in a good economy.

QUESTIONS SUBMITTED BY MR. BROWN

Mr. BROWN. Joint Base Andrews supports contingency operations in the capitol region, including support of nuclear missile sites, using UH–1N helicopters. Majority of these aging Hueys are from the Vietnam era, and these aircraft do not meet the full scope of current requirements for range, payload, and speed for continuity operations (Andrews) or nuclear response (other base) missions.

They should have been replaced long ago, and today we are dealing with critical threats to our national security. Can you tell us about the condition and state of readiness of the Hueys currently flying this mission?

General NOWLAND. Summary:

Readiness of the UH–1N community can be further addressed in a classified medium. In general, the UH–1N fails to meet mission (speed, payload, range) requirements and the community faces challenges due to pilot and special mission aviator shortages.

a. Air Force Global Strike Command:

The Air Force Global Strike Command retains 23 of the 63 UH–1Ns within the Air Force equating to 37% of the total aircraft inventory. It is expected that these aircraft will become increasingly difficult and expensive to maintain. United States Strategic Command deemed the current UH–1N not effective for many missions it supports and falls short of key operational requirements. The Department of Defense will continue to take action necessary to mitigate UH–1N capability shortfalls.

b. Air Force District of Washington:

The Air Force District of Washington concurs that the UH–1N does not meet requirements for range, payload, and speed. All questions regarding status of the UH–1N fleet are deferred to Global Strike Command as the lead Major Command for the UH–1N. The Air Force District of Washington retains 22 of the 63 UH–1Ns within the Air Force equating to 35% of the total aircraft inventory.

Mr. BROWN. Also, could you provide an update on the Huey Replacement Program and give the committee assurances that the program will not face further delays and is on track for an award in the 3rd Quarter of 2018?

General NOWLAND. The Air Force is currently in source selection for the UH–1N Replacement and expects contract award in the 3rd Quarter of fiscal year 2018.

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