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**AVIATION READINESS**

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BEFORE THE

SUBCOMMITTEE ON READINESS

OF THE

COMMITTEE ON ARMED SERVICES  
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

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## AVIATION READINESS

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HOUSE OF REPRESENTATIVES,  
COMMITTEE ON ARMED SERVICES,  
SUBCOMMITTEE ON READINESS,  
*Washington, DC, Wednesday, July 6, 2016.*

The subcommittee met, pursuant to call, at 10:03 a.m., in room 2118, Rayburn House Office Building, Hon. Robert J. Wittman (chairman of the subcommittee) presiding.

### **OPENING STATEMENT OF HON. ROBERT J. WITTMAN, A REPRESENTATIVE FROM VIRGINIA, CHAIRMAN, SUBCOMMITTEE ON READINESS**

Mr. WITTMAN. I am going to call to order the House Armed Services Committee, Subcommittee on Readiness.

I wish everybody a good morning, and thank you for being here today to discuss a topic that is instrumental to the success of our military operations, and that is aviation readiness.

Over the last several months, we have heard testimony from each of the service branches about what needs to be done to overcome our significant readiness challenges. A critical part of that testimony has dealt with the negative impacts that aircraft shortages, maintenance, and lack of adequate hangar space continue to have, not only on our overall readiness levels, but also on our military aviators.

In separate hearings about naval infrastructure readiness, both Admiral Mary Jackson and General Azzano testified about aircraft hangar fire suppression systems that were unusable and inadvertently activated.

At the Air Force hangar at Eglin Air Force Base, the instability of these systems ultimately rendered the entire hangar unusable for nearly 3 months. The impacted portion of the hangar, 17 percent of that hangar's airspace, remains today unusable.

The Marine Corps and the Army face similar facility challenges. The service branches also face real obstacles when it comes to the retention and training of flight and maintenance crews. Aging aircraft and prolonged maintenance times, not to mention the operational demands associated with the fight against terrorism, means that aviators and other personnel are dealing with more danger and fewer training opportunities.

Regrettably, the rash of recent military aircraft crashes have highlighted the human and other cost of dwindling aviation readiness. We owe our warfighters every protection and precaution available and I look forward today to hearing from each of our service branches about aviation readiness, readiness recovery, im-

pacts to safety, and where we can continue to take risks and what risks are acceptable and those which are not.

With that, I welcome all of you, our members of our distinguished panel and senior aviators before us today. We have with us Lieutenant General Jon M. Davis, United States Marine Corps, Deputy Commandant for Aviation; Lieutenant General Kevin Mangum, U.S. Army, Deputy Commanding General, U.S. Army Training and Doctrine Command [TRADOC]; Major General Scott D. West, United States Air Force, Director of Current Operations; and Rear Admiral Michael C. Manazir, United States Navy, Deputy Chief of Naval Operations for Warfare Systems.

Gentlemen, thank you for your presence and your testimony today. I look forward to hearing your insights about the readiness challenges to military aviation.

I would now like to turn to our ranking member, Madeleine Bordallo, for any remarks that she may have.

[The prepared statement of Mr. Wittman can be found in the Appendix on page 43.]

**STATEMENT OF HON. MADELEINE Z. BORDALLO, A DELEGATE  
FROM GUAM, RANKING MEMBER, SUBCOMMITTEE ON READ-  
INESS**

Ms. BORDALLO. Thank you very much, Mr. Chairman, and good morning to all our witnesses. I thank you, Mr. Chairman, for holding this hearing about some of the challenges and the solutions that we are facing with regard to aviation readiness across the services. We know that readiness shortfalls exist, from degraded maintenance capabilities to reduced training hours, and we need to address them.

Just as it will take time to build back readiness, these issues, of course, did not arise overnight. What the services are experiencing now and what we are working to remedy in the fiscal year 2017 NDAA [National Defense Authorization Act] are the consequences of years' worth of high operational tempo experienced by fewer aircraft with fewer experienced operators and skilled military and civilian personnel to sustain them.

The services have responded to falling material readiness conditions by identifying deficits and prioritizing training and maintenance needs, but these efforts are hampered by the continuing impacts of sequestration and unstable and unpredictable funding. 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 [CRs] and the unrelenting operational tempo required by today's complex security environment, it is not surprising that we are dealing with what some are calling a readiness crisis.

Just as these readiness issues did not arise overnight, they cannot be resolved in a single fiscal year's defense bill. More aircraft would bring some relief to the stress of high operational tempo, but these aircraft need more trained, more ready personnel to operate and sustain them and improved base infrastructure to support them.

So, we also cannot just throw money at the problem though, and it has become clear that consistency in funding are more helpful than increased budgets.

I welcome this opportunity today to hear from our witnesses about the challenges they are facing in their services to achieve and sustain aviation readiness. And I also encourage my colleagues to listen to some of the underlying causes of our current situation and also to think about the long-term financial commitments we are making in the fiscal year 2017 NDAA.

And I thank you, Mr. Chairman, and yield back.

Mr. WITTMAN. Thank you, Ms. Bordallo.

Gentlemen, I have been told that each of you will make an opening statement. And please proceed. And as a reminder, your written testimony has already been made available to the members and will be part of the official record.

So, General Davis, we will begin with you.

**STATEMENT OF LTGEN JON M. DAVIS, USMC, DEPUTY  
COMMANDANT FOR AVIATION, U.S. MARINE CORPS**

General DAVIS. Chairman Wittman, Chairman Thornberry, Ranking Member Bordallo, distinguished members of the House Armed Services Committee, Subcommittee on Readiness, and other distinguished members, thank you for your continued support. We appreciate the opportunity to testify on the current state of Marine aviation readiness.

The Marine Corps' title 10 responsibilities are to be the Nation's force in readiness. We are charged and expected to always be the most ready when the Nation is least ready. This responsibility is the very core of our identity as Marines, your "fight tonight" force.

The last time I testified, we were only able to fly on any given day about one-third of our aircraft. Today, we have improved and can launch 42 percent, 443 aircraft, of our required 1,065 flight-line inventory, a 9 percent improvement. We could not make this progress without your support. Thank you very much. However, we are still far short of what we need to be the force of readiness. Forty-two percent is not good enough; it is not good at all.

We are constantly transferring aircraft to fill out our deploying squadrons. Deployment success is at the cost of our non-deploying squadrons. We balance F-18, Harrier, E-6, and CH-53 squadrons by reducing the number of aircraft per squadron because of a lack of aircraft inventory.

So, yes, while I can tell you we are improving, I would characterize our current state of recovery as fragile. We are in a deep hole and have a ways to go to climb out. Continued progress in our race to recovery depends on consistent, reliable, and targeted readiness and procurement funding. Our risk is bought down through fixing old and procuring new.

The CH-53K recently lifted more than any helicopter in history. It is doing great in tests and is on track for replacing our CH-53 Echo. Just last week, we stood up our second operational F-35B squadron, VMFA-211 in Arizona.

Today, we have five lieutenants, brand new guys, training to fly the F-35B in South Carolina. The F-35B procurement ramp is approaching 20 per year, enabling the transition from our legacy

strike force to an aircraft that can protect marines and any threat as a fifth generation strike fighter, and then, at a time and place of our choosing, transition to a fourth generation bomb truck.

We need the F-35s and 53Ks as quick as we can get them to replace our proven but worn-out and wearing out F-18s, Harriers, EA-6Bs, and CH-53 Echos. The combination of fixing aircraft while recapitalizing with new gear are both critical to Marine aviation and the Marine air-ground task force [MAGTF].

I measure our recovery not only in terms of ready basic aircraft, but also on how many hours our crew fly. The ultimate readiness metric is aircrew flying hours per month per crew. The last time I testified, Marine pilots averaged between 6 and 9 hours per month. That is not good, either. Today, our non-deployed aircrews average between 7 to 11 hours per month. This is an improvement, but still 6 hours per month shy of what a trained and ready force requires.

The lack of ready aircraft in flight line is a reason for the shortfall, but more concerning is the loss of experience this generation of Marine aviators has preparing for the future. Marine aviation has a history replete with being exceptional in the air and able to provide unmatched aviation fire support to our ground forces. Every hour not flown today by our forces today means that they will have less of an experience base for our future.

Our enlisted marines are the highest quality ever. They work hard to sustain our aircraft and maximize every flight opportunity. They do get frustrated at the lack of parts available for fixing aircraft. They do work hours—long hours and weekends just before deploying to get that last aircraft up to make that on deployment or to complete a transfer to make sure their deployment numbers are whole.

Our deployment-to-dwell is not an ideal 1:3. It is a sustained 1:2; technically a state of surge. We are answering the combatant commanders' demand for incredible capabilities our MAGTFs offer, but doing it with aging aircraft, not enough of those aircraft, and our marines are stretched thin. They are doing their level-best to make themselves ready to be that potent and formidable combat-capable force, ready to take on any threat, any place, any time across a range of military operations.

In summary, Marine aviation readiness remains in jeopardy in this fiscally constrained environment. We have a plan to recover. The plan includes aircraft recapitalization, legacy aircraft recovery and reset, and that plan is showing positive results. But success requires continued funding stability, our production ramps in new aircraft to stay whole and the resources for our marines, sailors, civilians, and industry partners to recover the readiness of our aging legacy aircraft.

Thank you for your time today. I look forward to answering your questions.

[The prepared statement of General Davis can be found in the Appendix on page 45.]

Mr. WITTMAN. Thank you, Lieutenant General Davis.

We will now go to Lieutenant General Mangum.

**STATEMENT OF LTG KEVIN W. MANGUM, USA, DEPUTY COMMANDING GENERAL, U.S. ARMY TRAINING AND DOCTRINE COMMAND, U.S. ARMY**

General MANGUM. Chairman Wittman, Chairman Thornberry, Ranking Member Bordallo, distinguished members of the Readiness Subcommittee and other distinguished members, thanks for the opportunity to appear before you today to address Army aviation readiness.

As a career Army aviator, I am proud to represent all the terrific soldiers of our total Army aviation force who serve our Nation faithfully every day. I can also definitively say that the total Army aviation units across all our formations and components have performed magnificently over the last 15 years of sustained combat and operations in various threat environments.

I say this knowing full well that Army aviation faces the same and similar challenges and concerns as the rest of our Army in this budget-constrained environment.

Our aviation modernization and procurement accounts have slowed to a snail's pace in order to build readiness for the current fight. We have had seven serious manned mishaps, or Class A accidents, and eight unmanned accidents thus far this fiscal year. Flight training hours are our only resource to achieve platoon-level readiness, proficiency.

And our aviation maintenance soldiers and our combat aviation brigades are not deploying with their aircraft and aircrews, which is causing an atrophy of critical skills that will be needed for expeditionary operations in combat zones that do not allow for contract maintenance.

While we have resourced our deploying aviation units to a level of proficiency sufficient for the current and recent fights in Iraq and Afghanistan, we see peer and near-peer competitors and know that we will require resourcing our units to higher levels of proficiency in order to train for combined arms maneuver fights that will likely come.

We also know that with the prospect of sequestration in fiscal year 2018 and continued unpredictable budgets, these areas of concern may get worse before they get better as we prepare for the future threat environment.

As a result of these operational, strategic, and budgetary challenges, General Milley, our Army Chief of Staff, asked me to lead a holistic assessment of Army aviation with the mission to conduct a comprehensive assessment of all things Army aviation. I was supported by a superstar team of Army aviation subject matter experts who I would like to thank publicly today for their incredible effort to complete our initial work.

I have briefed General Milley on our initial findings and have received his guidance to finalize our report, which we will do very soon. And I am confident that those recommendations will set us on a path to get after some of the readiness challenges and opportunities that lay in front of us.

I often describe aviation as a fragile ecosystem. In order to keep this ecosystem healthy and thriving all the requisite parts must be nourished routinely. If any get out of balance for long, the whole system can begin to fray and collapse, putting soldiers at risk.

For army aviation and our readiness, this includes our personnel, pilots, crews, maintainers and all those who work the numerous support roles, our manned and unmanned aircraft systems, our installations and training ranges and facilities, and the resources and time necessary to meet battalion-level collective proficiency with modernized equipment.

While we can and have continued to assume risk in some areas of the ecosystem, in order to build the readiness needed to meet global aviation commitments, we do risk getting out of balance, which of course has consequences.

In order to meet the challenges of emerging and future threats, we must provide realistic training, resource with time and dollars and couple this with exceptional leader development. In doing so, we set the best possible conditions for success to provide a trained and ready aviation force whenever needed in support of combatant commanders to meet any threat or contingency.

That said, what we cannot do is resource our aviation units to platoon- or company-level readiness, yet expect that these same units—these same units to operate in environments that require battalion-level proficiency and flight skills. If there is something that keeps me awake at night, this is it. Additionally, if we do not address the issue of time and dollars and the demand signal for aviation forces continues to increase, we will consume readiness faster than we can rebuild it.

In a nutshell, we need to resource Army aviation units to train to battalion-level proficiency to keep the ecosystem in balance. This will allow our units to become proficient in those collective tasks required to operate at higher threat levels against peer or near-peer adversaries. This also means that our pilots and crews will get more repetitions to master their craft, and more is better.

The same is true for our soldiers who maintain our aircraft. They will get more opportunities to fix, repair, and maintain, which is critical to skill proficiency.

Last, and certainly not least, is that training to battalion-level collective proficiency allows for more robust leader development to ensure our leaders can operate against complex hybrid threats in the future.

Notwithstanding the challenges and concerns, the United States Army retains the largest, most modern, and best trained aviation force of its kind in the world. One that has been tested in a variety of operational environments and whose soldiers met and are meeting today, the tasks at hand no matter how difficult the danger.

Thank you again for the opportunity to testify today, we appreciate your support and I look forward to answering your questions.

[The prepared statement of General Mangum can be found in the Appendix on page 56.]

Mr. WITTMAN. Lieutenant General Mangum, thank you. Major General West, we will now go to you.

**STATEMENT OF MAJ GEN SCOTT D. WEST, USAF, DIRECTOR OF CURRENT OPERATIONS, U.S. AIR FORCE**

General WEST. Chairman Wittman, Chairman Thornberry, Ranking Member Bordallo, distinguished members of the House Armed Service Subcommittee on Readiness, thank you for conducting this

hearing today and allowing me to join Army, Navy, and Marine counterparts in testimony on our service readiness.

Today's national security challenges come from a combination of strong states that are challenging world order, weak states that cannot preserve order, and poorly governed spaces that provide sanctuary to terrorists.

The Nation needs a strong joint force and that force depends upon Air Force capabilities at the beginning, middle, and end of every operation. The Air Force must be able to disrupt, degrade, or destroy any target in the world quickly and precisely with conventional or nuclear weapons to deter and win our Nation's wars. Whether in support of counterterrorism operations or near-peer deterrence, your Air Force remains constantly committed, as we have for 25 years.

However two and a half decades of continuous combat operations and reductions to our total force, coupled with budget instability and lower-than-planned funding levels, have contributed to the creation of one of the smallest, oldest, and least ready forces in our history. While the Bipartisan Budget Act of 2015 provides some space to recover readiness and continue modernization efforts, the Air Force needs permanent relief from the Budget Control Act, flexible funding, increased manpower, and time to recover.

Today less than 50 percent of the conventional Air Force is ready to conduct the full spectrum of combat operations. While we are able to conduct nuclear deterrent operations and support counterterrorism efforts, operations against a near-peer competitor would require a significant amount of training. If called upon to fight state-to-state, an associated training delay would pose a significant risk to mission. Conversely, deploying airmen in their current readiness state to fight along soldiers, sailors, and marines, would significantly increase the risk to success of the joint fight.

Accordingly, we will address readiness shortfalls in five areas: critical personnel skills, weapons systems sustainment, training resources, flying hours, and operations tempo. All five must be synchronized and balanced. Since development of human capital takes the longest to complete, we must first address personnel shortfalls in critical skills.

We will also need to stabilize weapon system sustainment and improve our training infrastructure.

Finally, we need to increase our training hours and reduce operations tempo to provide the time our airmen need to prepare for full-spectrum operations.

Mr. Chairman Wittman, Ranking Member Bordallo, distinguished members of the subcommittee, I look forward to answering your questions as we work to resolve our readiness challenges.

[The prepared statement of General West can be found in the Appendix on page 65.]

Mr. WITTMAN. General West thank you so much. We will now go to Rear Admiral Manazir.

**STATEMENT OF RADM MICHAEL C. MANAZIR, USN, DEPUTY  
CHIEF OF NAVAL OPERATIONS FOR WARFARE SYSTEMS, U.S.  
NAVY**

Admiral MANAZIR. Chairman Thornberry, Chairman Wittman, Ranking Member Bordallo, distinguished members, I am proud to be here with my brothers in arms. Thank you for the opportunity to testify on the state of aviation readiness in the Navy.

For the first time in 25 years, the Nation and your Navy are facing the challenges of a return to great power competition at sea. Provocations from state and non-state actors continue to cause instability in almost every region of the world and pose a significant threat to U.S. interests, our allies, and the homeland.

But our Nation continues to answer the call. Today the Navy has four carrier strike groups forward deployed: *John C. Stennis*, *Ronald Reagan* in the Pacific; *Dwight D. Eisenhower*, *Harry S. Truman* in the Mediterranean and Arabian Gulf. We also remain vigilant with rotational presence of land-based aviation forces such as EA-18G Growler, P-8 Poseidon, and the P-3 [Orion] in the Middle East and the Western Pacific. These missions not only demonstrate our Navy's responsiveness and warfighting power, but also maintain our sailor combat proficiency, readiness bought only with time at sea.

This required level of readiness is fragile and can be squandered. As we reset in stride following 15 years of combat stress to the force, we continue to face challenges associated with balancing readiness for today and modernization for tomorrow's fight. More of our force is being demanded, deployed longer than planned; intended replacements are not keeping pace with attrition. Fiscal constraints continue to force difficult trades in capacity and readiness for long-term capability improvements.

Achieving full-spectrum aviation readiness requires us to restore capacity and throughput at our aviation depots primarily through workforce development changes and process improvement. Through a concerted hiring effort with the support of congressional budgetary increases, the recovery and maintenance capacity is underway and continues to progress.

Fleet Readiness Center hiring is on pace, and training continues so that we may ensure the depots can meet the looming workload demand. We have increased capacity at field sites, and are swarming repairs of aircraft on the flight line.

So far in fiscal year 2016, we have completed 50 percent more depot-level repairs on the flight line than we did in fiscal year 2015. We have also partnered with industry to incorporate additional engineering, maintenance, and depot capacity to accomplish inspections and repairs outside of government depot facilities. As a result of process improvement implemented in 2014, we saw a 44 percent increase in fiscal year 2015 F/A-18 A through D depot production when compared to the prior year.

We are recovering from a readiness deficit that started to accrue in 2009, and was exacerbated by sequestration effects. With the submission of the fiscal year 2016 omnibus request yesterday, and with a fiscal year 2017 President's budget request, we have invested to provide the maximum predictable and sustainable presence under the Optimized Fleet Response Plan.

The budget request harmonizes our readiness accounts to improve aircraft availability, the leading factor in our readiness challenge. Harmonization means that with the 2017 President's budget request, we realigned funds from the flight hour program, which is constrained by aircraft availability, to readiness enabler accounts such as depot maintenance, aviation support, aircraft spares, and aviation logistics. Each of these vital programs underpins the flying hour account, but has been critically underfunded in previous years.

Specifically, programs like the Aviation Support Program funds engineers and logisticians, who help diagnose and develop repairs for failed components discovered by fleet maintainers. In this approach to readiness harmonization, the budget for aviation support is broken into individual program elements tied to specific platforms.

In this manner we can track platform targeted investments, which over time will yield improved aircraft availability. While we are seeing signs of recovery, and our processes need time to mature, we need funding stability to support our plan. The bipartisan budget agreement of 2015 gave us the stability to make target investments in the near term, but the threat of continuing resolutions and the prospect of return to sequestration would undo this progress, and further hamper our fragile recovery plan.

Ladies and gentlemen, your Navy aviation arm is the world's premier sea-based airpower. That advantage could be lost if we do not achieve stable budgets and make deliberate investments in future readiness, while ensuring the force can fight tonight. Mr. Chairman, distinguished committee members, we welcome your continued support as we work together to overcome these challenges, build and sustain the preeminent force of the future. Thank you for your commitment to naval aviation, I look forward to your questions.

[The prepared statement of Admiral Manazir can be found in the Appendix on page 75.]

Mr. WITTMAN. Admiral Manazir, thank you.

I wanted to thank our other panelists here, and now I want to go to the chairman of our committee, Chairman Thornberry, for his comments and questions.

The CHAIRMAN. Thank you, Mr. Chairman. I would just like to take a moment to thank you and Ms. Bordallo for holding this hearing, and for all the members of the subcommittee and your staff for your deep dive into this important issue. I think it is very important that we and the American people understand what is happening, and I really admire the witnesses today and their efforts to make the best of a difficult situation.

So first and foremost, I want to thank you, and as well as our witnesses, for dealing with this. I want to take just a moment and clarify one issue with General Mangum, if I may. You testified sir, that starting in fiscal year 2015, a combat aviation brigade was deployed to Afghanistan—it was supposed to have 2,800 soldiers, it only sent 800, right?

General MANGUM. Yes, sir.

The CHAIRMAN. And one of the ways you got from 2,800 to 800 was to leave most of the maintainers behind, right?

General MANGUM. Yes, sir.

The CHAIRMAN. And so what do those maintainers do when they are left here in the states, when their aircraft and their pilots are in Afghanistan?

General MANGUM. Sir, they are not doing a whole lot of aviation maintenance.

The CHAIRMAN. Well, and I think that your point, as I understand it, is that does not help readiness when you have important maintainers without aircraft to work on.

General MANGUM. No sir, we are building a deficit of experience and expertise in our formations as a result.

The CHAIRMAN. And then my second question was, as I understand it, what is happening in Afghanistan is that we have contractors who are taking care of those helicopters, right?

General MANGUM. That is correct, yes, sir.

The CHAIRMAN. And does that cost more or less than if the maintainers had been there with them?

General MANGUM. It costs more.

The CHAIRMAN. To have contractors?

General MANGUM. To have contractors there, we are paying around \$100 million this year for contractors in Afghanistan.

The CHAIRMAN. And that practice that started in fiscal year 2015 continues today?

General MANGUM. Yes, sir.

The CHAIRMAN. Mr. Chairman, I just think it is important for members to understand this point. I understand that there may shortly be an announcement on troop caps for Afghanistan, and one of the ways the troop caps are reached is like this.

And it costs more, and yet where does that money come from? It comes out of the readiness of all these folks, and what they are trying to do. It is only a subset of the issues you are looking at today, but I think it is important for us to understand it.

Thank you for letting me take a moment to clarify that. I yield back.

Mr. WITTMAN. Well, thank you Mr. Chairman, I appreciate you bringing that up.

I know Lieutenant General Mangum and I had a chance to talk about that the other day, and that does get down truly to the element of only platoon-level readiness, and if you don't have the maintainers there and the ability to operate at those higher levels of training at the battalion and brigade level, then it creates a whole new set of circumstances.

I would like to ask a question collectively of all of our witnesses. In looking at the scenario we had today, each of you spoke about where we are today with the President's budget for 2017, and then the NDAA that was passed both by the House and the Senate, and the appropriations bills for national defense, one here in the House, one soon to be taken up there in the Senate. Those all have us at higher overall spending levels.

We can debate back and forth about how many of those dollars are OCO [overseas contingency operations] but how many dollars are in the base budget, but overall an increase. And each you all spoke to that and how that increase is helpful to you in regenerating readiness. And where we are today is just preparing the

conditions to reestablish that readiness, so it is not even getting on that steep glide slope of rebuilding, it is just setting the conditions.

Give me your perspective in that element of setting the conditions, of what a CR this year would do to you in getting where we need to be, in reestablishing that aviation readiness, and Lieutenant General Davis, I will begin with you.

General DAVIS. Thank you, sir, for the question.

We talked about stable funding, and I think the hard work the Marines put forth this last year, to recover from what I consider to be the lowest ebb of Marine aviation readiness in a long time. F-18 pilots on average 8.8 hours a month last year. That is about half what they should be flying.

Now we are about 9.8 for those that aren't deployed. That is still way below where we should be. So we are eking out inch by inch a progressive recovery out there. So the recovery, and the budgets, while good, we need to make sure they stay whole, sir. Why is that? We need to procure the new airplanes that are—a lot of our old F-18s and 53 Echos are really old and we are running out of service life and it is really hard for those marines to keep them going.

So, buying the new—putting the readiness recovery money into the platforms, we have like 53 reset, allows us to extract maximum value out of any risk to those funding profiles puts that recovery at risk. And I would say we are in a period of risk right now in Marine aviation to recover to get back to full warfighting formations to be the force in readiness that this body told us we have to be.

Mr. WITTMAN. Very good.

Lieutenant General Mangum.

General MANGUM. Mr. Chairman, the greatest risk for CR to Army and Army aviation is in training. We have programmed to kickstart our readiness recovery with increased flight hours to get us from—to start the journey from platoon-level collective readiness to company-level collective readiness.

We would remain at platoon-level readiness funding under the CR, as well as putting further constraints on our modernization programs that are already at the floors for multiyear procurement. So, it would definitely constrain our ability to start our journey to readiness recovery.

Mr. WITTMAN. Very good.

Major General West.

General WEST. Yes, sir. I would echo the same comments, that if we are faced with a continuing resolution this year, as has happened in the past, we will be capped at previous spending levels, which prevents us from realizing the benefit of having increased funding levels in fiscal year 2017 to address readiness.

When we are capped at previous year's funding levels, we prioritize. Our first priority is to support troops in combat. Second, those that are forward deployed to assure our allies, which means the bill-payer for training are those that are here in the United States. So, it exacerbates the issue not only that we not be able to begin to slow the rate of decline, it delays the start of us being able to stop the rate of decline of our readiness.

Mr. WITTMAN. All right. Thank you.

Rear Admiral Manazir.

Admiral MANAZIR. Thank you, sir. The neat thing about being last is I get to capture all the comments, and agree and summarize.

You spoke of that increase, and I would like to complement the teamwork that we have had in all the services and especially your committee on building this case for readiness. You spoke of that increase, so the President's budget was an increase. The various bills are increases. If we go with a CR, all of that increase gets wiped out.

Additionally, each year, as was spoken by Scott West, we program to a set of operations in a year. So, more deployments for Navy, different deployments, different length of deployments, different employment of the force. Our request reflected that operations, maintenance, and training for fiscal year 2017.

It is a deeper request because we have to recover the readiness and support those maintenance and support. So therefore, if we stay with a CR, it will not reflect the request that we sent over from our budget.

Mr. WITTMAN. Very good. Thank you.

We will now go to Ms. Bordallo.

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

General Davis, could you explain the consequences for current Marine Corps aviation readiness of not executing a reset program to bring all equipment to readiness standards, as the Army did for nearly two dozen major units during OIF [Operation Iraqi Freedom] and OEF [Operation Enduring Freedom] instead of waiting until now, as the Marine Corps has done?

General DAVIS. Well, I think the community that was particularly impacted was the CH-53 Echo. And we have—had low numbers of CH-53 Echo.

The reset is not the only reason for the low readiness. We have a—I would say a very debilitating “not mission capable-supply” problem in CH-53. But the reset will allow us to basically get our aircraft back up to speed, while, you know, in the timeline—an ability to order the parts we need to get our supply bins full so we can get maximum value out of the airplane.

But the CH-53 was about one-third of the CH-53s we have in the inventory we are able to fly, maybe even a little bit less. Recovering that now, the flight time was very low. A lot of those units now, the flight time has about doubled what it was last summer. So, we are recovering in CH-53, but the reset is essential to do that now.

So we copied a playbook out of the Army. We had an independent readiness review that looked at what was wrong with the CH-53 and why we couldn't get our readiness out of that aircraft. We also did it with Harrier. The Harrier has recovered its readiness. We are generating the numbers we need to out of that airplane. It is serving, again, really great in combat and we are able to track the training missions we need to out of that.

CH-53 is going to take a longer time to recover. It will take us until about 2019 to 2020 to get all of our CH-53s back up in the battery that they should be and the numbers they should and a highly reliable airplane. It is a good airplane now, but it will be

highly reliable. So, we should have done that before, we didn't, and we are doing it now.

And also, too, we have to address the not mission capable-supply problem, which the low inventory masked how bad that really was.

Ms. BORDALLO. Thank you. Thank you, General. I have another question for you and General Mangum. In your opening statements, both of you discussed trends in Class A mishaps, which result in loss of property and/or life. Could you discuss your findings and whether you believe there is currently a correlation between degraded readiness, whether due to maintenance failures or inadequate training?

And the other witnesses, I welcome your remarks as well. So, begin with you, General.

General DAVIS. Ma'am, I will tell you that we don't fly any aircraft that is unsafe. I will say that my pilots across the Marine Corps are not getting the flight time they need. With the exception of the F-35; we are generating our hours in that new airplane. They are not getting the hours they need to be as proficient as they should be.

So, while historically, our Class A mishap rate is higher—is high—it is high, but it is actually kind of on par where it has been in the past. But I—smaller number of flight hours, every mishap makes that bump up a lot.

What I will tell you is we are seeing a spike, almost double the number of Class C mishaps than we had last year and we are trying to look at why the reason for that is.

What I will tell you is kind of hard to take a look at from today's standpoint, but we are flying less, getting less experience. So my flight leads 2, 3, 4 years from now are not going to be guys with 1,000 hours or 1,500 hours, like I had. And you have got a youngster on your wing that is having a problem, you go, do this or do that. The flight leads coming back now, because they are not getting the flight time they need, will have 500 or 600 hours.

They don't have that looks at the ball like my compadres talked about that will say, this is what you should do. So, I think we could see future mishap spikes in the Class A realm because of the low flight time and the low experience our guys are getting right now.

So, while the numbers are steady, they are unacceptable. We should be driving those numbers down. And it is something we need to work on and I—it is hard to tie the low flight time to a Class A mishap rate right now, but we are seeing the high OPTEMPO [operations tempo]. The deployment-to-dwell I think has an impact for sure on our Class C mishap rate, which impacts our readiness to a great degree. If—again, 100 percent increase from last year in the Marine Corps in Class C mishap rate.

Ms. BORDALLO. General.

General MANGUM. Ma'am, this year, our Class A accident rate for manned systems is down, and not to historically low levels, but we continue to trend down. So, correlation between the hours and our accident rate is a bit tenuous.

However, more repetitions is better. Practice makes perfect, and as we increase our flying hour program to achieve higher levels of collective readiness, that gives our flight crews more repetitions, it gives our maintainers more repetitions.

However, as we start to go to higher levels of collective training, say at the National Training Center or Joint Readiness Training Center, as we ask those crews to do some things they had not been doing to the same level, we will face increased risk as we increase the flight hours.

That is a bit counterintuitive but I guess to specifically answer your question, ma'am, we don't see necessarily a correlation based on them being isolated events. This year, we have had 1.16 accidents per 100,000 hours which is the military and industry standard to measure those against which is down from last year.

We are seeing a spike in our unmanned systems and those are still under investigation to try to determine what the root cause of those are.

Ms. BORDALLO. General West.

General WEST. Yes, ma'am. We have not—we analyzed our mishap rates over the last 10 years, which we keep the data for. We can't find that there is a correlation between our trend in mishap rates and our readiness levels.

Our mishap rates still are at the same rate that they have been over the past 10 years. I would expect, because of our readiness concerns and deployment-to-dwell issues that we might see some trends related to human factors.

Either operators that are complacent when they are back in the United States or maintainers that may fail to follow tech order guidance in the maintenance of aircraft. But we haven't seen that and I think that is emphasis on professionalism that we don't sacrifice airworthiness or safety standards to recover readiness.

Same thing in our depots; the workforce that sustains systems, some over 50 years old require more time to be able to complete the work in the depots and they take the time necessary to provide airworthy and safe systems to be able to operate.

I think that has contributed to the fact that we have not seen an increase in material failures in older systems. However, separating mishaps and the fact that right now we are having the same decreasing trend in mishap rates does not mean that we don't have a readiness issue.

We still have a readiness issue, it is just not manifesting itself in our mishap rates.

Ms. BORDALLO. Admiral.

Admiral MANAZIR. Ma'am, thank you. We do not see our mishap rates manifesting themselves from a lack of readiness. Our Class B aviation mishaps are down this year over the last 2 years and our Class As are consistent.

We looked at the Class A mishaps and they were a very small number to see if they were proficiency-based. In other words, not enough flight time or aircrew executing operations that they were not proficient for. And in fact, that was not the case.

The aircrew involved—and I won't go into the causal factors because they are privileged—were well-experienced and they were proficient at their trade. The Class C mishaps, we have seen an increase to nearly double what it was since 2008, so similar to General Davis' testimony.

We are diving hard with the safety center to see what the causal factors would be for an increase in Class C mishaps, ground mis-

haps, were the mistakes made because of inexperience, were there procedures that were not followed.

This might be an indicator at the lower level of our mishap classes of potentially some effects from readiness. But when we asked to look at the way that we put causal factors against mishaps there were none that stood out as low readiness, low currency, lack of familiarity with procedures for our aircrew or our maintainers.

But we continue to look at that Class C mishap rate to see if there might be a problem. I will endorse the comment made by several of my compadres here that we probably won't see the effects of a critical underfunding of readiness, critical underflying, critical lack of experience, for several years.

As people are now put in leadership positions and they are leading larger flight operations or they are leading squadrons and with a lack of experience, that lack of exposure, you might start to see some effects on the units that they lead because of the lack of flying several years ago in different positions.

So it could have a lagging effect in the future. We are worried about that.

Ms. BORDALLO. Thank you.

I have one further question, Mr. Chairman.

To any of you, though both situations would be ideal, which fiscal remedy would help build back readiness most effectively over the long term? Increased funding or stable predictable budgets?

General.

General DAVIS. Can I say both, ma'am.

[Laughter.]

Obviously, stable budgets are key. As you know, we are in recovery so we have a little bit more requirement for that. We have kind of held off, we are right now in the heyday of our procurement, our recapitalization in the Marine Corps.

We are only about—we are just starting now our TACAIR [tactical air] recapitalization so all the Harriers and Hornets have to be replaced and our 53s have to be replaced. Stable funding is best.

But also, too, it is if you are funding below the minimum required then—if you are funding below the requirement—you have got a requirement—you are going to end up with something that is—I am no math major, but that is a recipe for disaster and kind of where we are right now.

Ms. BORDALLO. General.

General MANGUM. Ma'am, the answer is both. Stable predictable funding; we have brought down our modernization counts to the floors of our multiyear contract. So we have slowed our modernization to a snail's pace.

And if our predictable funding keeps at platoon- or company-level collective readiness, we are not on the recovery path that we need to be.

Ms. BORDALLO. General West.

General WEST. Yes, ma'am the answer is both here, as well. Given an—I will give a response for the need for stable predictive funding based on the effects on industry.

If you operate a fleet that is decades old, you have to be able to give the business case—make the business case—of why should you stay in this business to make a reasonable profit, given that we

don't know if we are going to have a predictable level of funding to be able to warrant you being in this business. That has an impact on older systems.

As to the top line for increased funding, that is also important because we have to balance the discussion topic here today, which I define a little bit separately from modernization, because we will have a bow wave of issues of modernized projects to come up in the next decade that we will have to address.

Otherwise, the things that we are readying today will be irrelevant in combat given the gaps that our near-peer competitors are closing technologically.

Ms. BORDALLO. And finally, Admiral, do you agree with your compadres?

Admiral MANAZIR. Ma'am, I say it is stable and predictable budgets but only after you have increased the budget to buy back the readiness deficit that we have built. So we have to get back at—buying that whole back and then you can probably decline that level and get to stable and predictable so that we can stay with the readiness capability of our force.

Ms. BORDALLO. Thank you.

And I yield back, Mr. Chair.

Mr. WITTMAN. Thank you, Ms. Bordallo.

And now I will go to Mr. Scott.

Mr. SCOTT. Thank you, Mr. Chairman.

Gentlemen, thanks for being here and I want to go back to what Chairman Thornberry said that is one of my great frustrations is that, you know, some political strategist somewhere determines that it is going to be popular to say that we have drawn down a certain number of troops.

And so we are sending the pilots and not the maintainers and in fact, we are actually paying more for the equipment to be maintained by contractors. And all over something that reaches a political target and has absolutely nothing to do with winning the war.

With that said, I hear your comments about the continuing resolutions and the other issues. I want to encourage you, as I have in private meetings, and I want to do it publicly, to meet with members that are not on the Armed Services Committee.

The term "readiness" is not something that, if you are not on this committee, that you would normally hear. And I think the majority of the members of this committee will vote to support you in the things that you need. In order for us to win that vote, we have to have votes from members that are not on that committee—on this committee and I would encourage you to meet with them as well.

But General Scott, under the Budget Control Act, the funding levels—what are the hardest readiness choices you will have to make in the Air Force fleet? And what impact do these have on your ability to meet mission requirements, national defense strategy, both today and in the future? And I would appreciate it if you could be specific on that.

General WEST. Today your Air Force is able to support nuclear deterrent operations. We are growing our cyber capability. We are able to conduct space operations. We will have to continue to modernize in space. And we have grown and will continue to grow our ISR [intelligence, surveillance, and reconnaissance] capability.

To get to those four areas of operations, we had to make trades in people and our conventional air forces. We downsized 252 aircraft, 10 squadrons' worth of fighter squadrons to—and made people trades that today has resulted in our first readiness issue and that is to address critical skills.

That is mainly in maintenance. We need an increase of 4,000—up to 4,000 to be at end strength of 321,000 for the Air Force. And that is the first readiness hurdle that we need to be able to have support, and I think we do have that to get after our readiness recovery.

Because that takes up to 7 years to build the maintainer of the future we want, which is not just freshly out of high school and trained, but has experience on how to trouble-shoot the aircraft, particularly those that are older. That timespan means we can start later on increasing weapon systems sustainment, improving our range infrastructure, adding to the flying hour program, and last, working within the Department of Defense to reduce our operations tempo. So our first—the first criteria—first thing we would ask for is for a modest increase in end strength.

I didn't quite answer your question, sir. Let me go back to where our concern is. What our concern is not that we can't conduct counterterrorism operations today, nuclear operations, space, cyber, and ISR. We do that. We rotate through the Middle East and we support our joint partners. Where we have concern is to have the time and the resources available to train when not deployed, for full-spectrum combat. That is the concern.

Mr. SCOTT. Is it accurate to say that the fleet—the Air Force fleet is older today on average than it has ever been?

General WEST. Yes, sir, it is. I had an anecdote that a B-17 that flew in World War II, which they were made shortly therefore. If it had flown in Desert Storm, the aircraft bombers we are using today are older than those B-17s would have been. It is an aged fleet.

Mr. SCOTT. And how many fewer men and women do you have today than you had in the first Gulf War?

General WEST. It is on the order of thousands. I will get you that. I will get you the data, but if I could put it in terms of fighter squadrons, we had 134 fighter squadrons at the beginning of the Gulf War. Today we have 55.

Mr. SCOTT. One hundred and thirty four at the beginning of the Gulf War and today we have 55.

General WEST. Fifty-five. Yes, sir.

Mr. SCOTT. Could you touch briefly—I am down to about 30 seconds—on the status of the Air Force depots and how they contribute to the increased readiness of the Air Force?

General WEST. It is critical. They find—they weigh—they sustain the older systems that are decades old that we use and operate today. Our KC-135 mishap—reliability rate is outstanding to me, and I think it is on the backs of professionals that work in our depots.

Mr. SCOTT. Gentlemen, thank you for your service and I look forward to working with you to resolve these issues.

Mr. WITTMAN. Thank you, Mr. Scott.

We will now go to Mr. Peters.

Mr. PETERS. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here.

General Davis, you may have answered this question in response to Ms. Bordallo, but I wanted to sort of explore the mitigation strategies that the Marine Corps might have in the event that the F-35 squadron transitions take longer than the expected 2 years, or if the F-35s continue to experience technical delays.

General DAVIS. What we are seeing right now, sir, the F-35 is exceptional capability. Marine Fighter Attack Squadron 121 [VMFA-121] ran their, you know, their kind of an operational readiness inspection; knocked it out of the park. We just finished the Weapons and Instructor Course [WTI], VMFA-211 stood up. And we actually have three airplanes over in the United Kingdom [U.K.] right now getting ready to do the Farnborough and Riyadh Air Show.

A lot of excitement over in the U.K. We are very excited about the airplane. I can tell you we just ran a transition board for F-35 and everybody that can put in to fly the F-35 is—to include my oldest son who is getting ready to fly that airplane; youngest one would like to do it, too.

We are not seeing a problem right now. The production line is ramping up to full-rate production. What we have to do is keep our F-18s and our Harriers going, sustain them properly to make our F-35 bridge. Right now, we are seeing no problems with that airplane. What we are seeing is high readiness rates and incredible capability.

We just ran a WTI drill where normal scenario that we would have with our legacy aircraft out there. I was a CO [commanding officer] at the weapons school. Generally about half the airplanes that go into the across the—ROMO [range of military operations], the high-end threat, Prowlers, Hornets, Harriers, and generally about half to a third of the airplanes don't make it through.

The F-35s, 24 to zero kill ratio. It killed all the targets. It is—it was like Jurassic Park, watching a Velociraptor. It kills everything. It does really well, so we can't get that airplane fast enough into the fleet, sir.

Mr. PETERS. Okay, I know we are putting some hangars up at Miramar. Hangars are the least of your worries, I think, so.

General DAVIS. Actually, hangars are essential. A lot of our infrastructure in our bases is World War II-vintage. And so Miramar—what we are building is a two-squadron hangar out there at Miramar. So we are really happy to get the support on that.

We are very tightly aligned with the United States Navy on the F-35 program. We are going to procure four squadrons of F-35C, the tailhook variant of the airplane. And when the first tailhook-capable carrier for F-35C moved from the east coast to the west coast, we had planned on standing that squadron up on the east coast. Now we have moved it to the west coast.

A lot of help from you guys; worked inside the Marine Corps on green dollar budgets to build a hangar out there at Miramar and got that done so we can actually be ready to take that airplane when it comes. It is not just the hangar. It is the training facilities and everything else that goes with it. So a lot of excitement at Miramar to get that airplane out there.

Mr. PETERS. Okay, terrific.

One other question about training. You have discussed the hours and in terms of experience, and it has been reported in the press, General West, that the Air Force Research Laboratory's secure live virtual constructed advance technology environment, advanced technology demonstration—that is a simulator. Does that help address the gap? And tell me kind of what advantages that offers? And where it leaves you short.

General WEST. Well, sir, in general there is a right balance between what training we can conduct in simulators versus what training we need to conduct and do conduct on live ranges. And the balance is this. In simulation, you can train operator or a maintainer to do certain tasks very well. You can integrate operations between different operators.

But what you don't do in a simulator is assess the entire performance of the system: do the sensors work, because—for example, because the sensors are replicated in simulation.

So you have to have a balance between stressing and training the entire system, maintaining, generating the sortie, loading the weapons and actually performing against threat replicators in a live range to see how the sensors work—do they work as they are supposed to do—and crews make decisions on what to do, versus what you can replicate in simulation which doesn't stress the entire system but gives you great capacity to train the human being.

Mr. PETERS. In terms of the simulator part of the budget, do you think that we have adequate resources to stay on track and keep the program goals?

General WEST. Yes, sir.

Mr. PETERS. So that it is after the simulation that you are concerned about the training primarily?

General WEST. Yes, sir. It is getting the right mix between simulation and supporting the funds necessary to upgrade our ranges to replicate what threats airmen are going to face in the future, which are closing the gap, if you will, on our technological advantage that we have right now and also sustaining our ability to employ and train and test weapons, and you need live ranges to be able to do that.

Mr. PETERS. Okay.

Thank you, Mr. Chairman, for having the hearing. And I yield back.

Mr. WITTMAN. Thank you, Mr. Peters.

We will now go to Ms. Stefanik.

Ms. STEFANIK. Thank you, Mr. Chairman.

My first question is for General Mangum. As you mentioned in your testimony, the Army aviation community is blessed with agile and adaptive leaders. I have seen this firsthand with the 10th Combat Aviation Brigade at Fort Drum in my district.

My question is, how will certain force structure reductions combined with such a heavy demand for aviation assets impact overall readiness? We know the Army prioritizes operational readiness, but where does it assume risk for the future?

General MANGUM. Ma'am, currently, we have 11 combat aviation brigades in the Active Component and 12 aviation brigades in the Reserve Component for a total of 23. Twelve of those twenty-three

brigades have elements deployed overseas today. So the—that fine balance between consuming readiness and our ability to rebuild it, we are on the edge.

And again, I think we have all used the word fragile, there is some fragility into this system. So we are, again, about at the tipping point. Several years ago, we did a study that determined that we needed 15 or 16—between 15 and 16 combat aviation brigades in the Active Component. We are on glide slope to go to 10, the National Commission for the Future of the Army recommended maintaining an eleventh.

So we are—again, we are at the tipping point. The National Commission for the Future of the Army recommendations are—Secretary Fanning and General Milley will consult with Secretary Carter here soon, but all of those recommendations come with no resources.

Ms. STEFANIK. My next question is for Admiral Manazir.

Earlier this year, I had the opportunity to embark on the USS *Harry Truman* with my colleague Mr. Peters. How will the recent 30-day extension of the USS *Harry Truman*'s deployment impact future carrier deployments? And is there a concern that future deployments could be extended? And what is the impact on the carrier air wing?

Admiral MANAZIR. Yes, ma'am. First of all, thank you for going out to *Harry S. Truman* and seeing what our great Americans do on that flight deck and around the carrier strike group.

The *Harry S. Truman*, as you read from the press and saw the reports—maybe on a classified level—had a superb deployment, both in the Arabian Gulf and the Mediterranean Sea and demonstrated the power of mobile sea-based aviation.

We build into our Optimized Fleet Response Plan the capability to continue to deploy or to extend the deployments of our carriers once they go on deployment. The model is 7 months for the deployment, but we build in some surge capability on the carrier when the Nation calls, as in this case, they did.

The particular impact is—required more readiness dollars to keep the carrier strike group out there for an additional month. So we had to pay for that. That caused some impacts to the training—the forces in training down the road. But it didn't impact the *Truman* strike group, particularly because we had already planned for that, both the air wing, the ship, and the accompanying ships.

Ms. STEFANIK. Thank you very much.

I yield back.

Mr. WITTMAN. Thank you, Ms. Stefanik.

We will now go to Mr. Ashford.

Mr. ASHFORD. Thank you.

Just a comment—a question to General West. First of all, General, thank you for and thank the Air Force for moving forward on the restoration of the runway at Offutt. I think it is a great improvement for the 55th and I appreciate that.

I have a couple questions related to the ISR mission, specifically the 55th, that is the mission that I am most familiar with. I have visited in Qatar and just recently at Mildenhall and several visits at Offutt. The nature of that mission is obviously an ISR mission, a highly—high-tech mission. The vast majority of the military per-

sonnel on those airplanes are not pilots, they are actually back in the back working on the computers and intercepting the information that they are getting.

The concern that I always get from them, and you have really talked to it, not specifically on this issue, but is the training. And I know during the time prior to 2015, there was a great deal of concern about training in language proficiency and—which is a major part of the mission. How do you see that improving? And I know there are some languages where there—we need more proficiency.

At Mildenhall, I was able to visit the training center there where they are doing great work and getting people up to proficiency and continuing to move forward into their testing regimens and so forth. But how do you see that evolving? And what impact would it have if we were to go back prior to 2015, specifically on the language issue as it relates to the 55th and other related missions?

General WEST. Thank you, sir. I am not familiar with the language issue to which you refer.

Mr. ASHFORD. Just the proficiency in the various languages, which is the—you know, the central core of that 55th mission.

General WEST. Yes, sir.

Well, I would say this. The 55th has capabilities that are absolutely necessary if we had to go to combat versus a near-peer, state-to-state combat. The training that the 55th and operations that the 55th conducts now down range, as they did for me in Afghanistan and others in other places, doesn't place the demand signal on proficiency that training would for other scenarios.

So providing not only just the maintainers that we need, which is mainly for—not for the big wing ISR at Offutt but other platforms, but providing the weapons system sustainment, these are older platforms.

Mr. ASHFORD. Right.

General WEST. The training range infrastructure that includes simulation that we can upgrade to replicate what is now not only possessed, but being exported by near-peer competitors, and working with our Joint Staff partners on deploy-to-dwell issues so we have got more time to be able to train with the flying hour program.

All of those have to be synchronized in order to start to recover readiness. It is not just one individually can work it.

Mr. ASHFORD. Right.

And I—my point, I guess, is to—is that I was—it is very impressive to see what has been achieved in the last year and a half in upgrading the training and getting more people trained in specific line language, and obviously, the maintainer issue is always—is also a big issue.

But the gaps that existed prior to 2015, to a great extent, have started to be extinguished on the training side on language specifically. But I just—the comments that you have made regarding readiness generally and training generally and maintainers generally applies, I think, to the language sector as well. And I just applaud the Air Force for moving quickly to fill those gaps.

Thank you, Mr. Chairman. I yield back.

Mr. WITTMAN. Thank you, Mr. Ashford.

We will now go to Mr. Cook.

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

A couple of my questions—a little bit different. I want to talk about the—maybe the F-35. And airspace, particularly on the west coast and particularly in California and—training time, I think, is essential. And we have some issues that I think everybody, all four services, are impacted by the FAA [Federal Aviation Administration], and I am talking about the corridor that goes into the Los Angeles area.

I am a ground guy, so I can't even spell air. But the problems that we are going to have with the F-35 in the envelope and they even effect ground weapons, such as the HIMARS [High Mobility Artillery Rocket] system at Fort Irwin. And some of the paths that they have to take affects Mugu, it affects the Air Force base that—all the ranges are basically in my district, and most of them in San Bernardino. China Lake, I don't have the headquarters, but I got all the ranges.

I have got obviously Fort Irwin, and the—some of the restrictions that are coming out would have a major impact on the training of all four services. And if you could address that or how concerned you are about this because I just think it is going to get worse and worse and worse. This is not the old aircraft, and that is—but the F-35 is—operates in a different area and some of these newer weapon systems.

So if you could comment on that, please.

General DAVIS. Sir, I will take that question to start. We are very concerned about it. And as you know, I am a guy who joined the Marine Corps not knowing they had airplanes. So, rifleman first, aviator second always. Hoorah.

Mr. COOK. Thank you.

General DAVIS. That should probably scare you a little bit, that I am running Marine aviation right now.

But bottom line is the F-35 is a qualitatively different airplane, both in capabilities and also watching the way the Marines are flying it. They fly Twentynine Palms, Yuma, out there. They are using a lot more airspace to extract maximum value out of that airplane. And I can't talk about all the numbers because they are classified, but it is more and it is different. I think those ranges are national assets and we have to do our level best to protect them.

The Marine Corps, like the Army, the Navy, and the Air Force, are all trained to fight not today's fight, but also tomorrow's fight. And it is a very high-end fight and at the end of the day, we cannot be caught short because we didn't have this much altitude or this much range space to bring these qualitative advantages that you are providing for us and our marines, soldiers, sailors, and airmen are fighting and flying with.

We need airspace. You need to spread out, train against the near-peer competitor. It is not what we have been doing for the last 15 years in the aggregate. It is very different. And all of us need to train and be able to do that, and we need the space to move out and train.

We are seeing that with the Air Force out there at Nellis and the Navy up at Fallon and even at the National Training Center and our ground forces. Long-range rockets that—we need the ability to

fight at range, see at range and dominate at range and kick anybody's butt that is out there at range. And we need the airspace and the ground space to do that, sir.

Mr. COOK. Thank you.

Anyone else?

Admiral MANAZIR. Sir, OPNAV [Office of the Chief of Naval Operations] has an office inside of the Director of Air Warfare that works directly with the FAA on encroachment issues. I would echo what General Davis said. Our ranges are crown jewels in our ability to train.

We have worked with the FAA on airspace corridors. There are limited places to go supersonic, especially in the West. There are small corridors. It is—the airspace is very dear. Connecting the ranges between Nellis and Fallon, Point Mugu, the sea ranges over to China Lake is something that we already do.

But encroachment is a gigantic issue. So, not only the airspace, but encroachment on the ground towards our training ranges for peaceful issues like wind farms and the partnership with wind farms all the way to nefarious threat countries who would try to buy property in close so they can monitor what we are doing.

The F-35 is different. I would offer to you that our networked way of warfare, the way we are going to do warfare with fifth generation would take up about three quarters of the United States if we could have it. And so that goes to the value of what General West talked about, which is this live virtual constructive training.

So, when we have to go to the high-end fight using fifth generation and full, full capabilities, it is not just the geography of the airspace which is getting limiting for F-35, but also our ability to practice how we are going to really fight. And so we have to tailor what we do in the air.

Mr. COOK. I appreciate that comment. I am not always sure that the FAA is on the mindset of a lot people in this room here in terms of readiness, readiness, readiness, combat readiness. And they might have other priorities that are not the same. And obviously, I think this is a battle that is going to be a bureaucratic battle just like you fight about the budget and everything else.

Just one last question I have, and that is on tempo of ops, and it has always been my concern that we overload that box. The planners, we are going do this, this, this, this, this. You can only do so much. And I think, yes, but the big wars and everything like that, but you are going to see more and more come-as-you-are parties. And maybe that is a bad phrase. But you never know what is going to—and you have got to be ready to go when the balloon goes up.

And any comments on being overloaded with tempo of ops, which I think are always going to be there?

General DAVIS. If I could, sir. The demand from the combatant commanders is strong. Again, we go back, I think the demand is reasonable and if you got the assets that you need to go do the job right. Right now, we are shy on the number of platforms we have. So, the Marines are working really hard to make ends meet.

So, I think the dep [deployment] tempo of 1:2 is manifested or made more deep, and the fact that they just don't have enough of

the assets to go around so they are working harder to make ends meet.

Right now, the world is a pretty dangerous place and we have got marines forward deployed at sea and at shore, and all of them are very gainfully employed. So we are doing our level best to try to pull some of that—try to do a little bit better with a little less to reduce the number of assets we have forward deployed, but it has met with not a lot of positive effects from our combatant commanders right now.

Mr. WITTMAN. Thank you, Mr. Cook.

We will now go to Mr. Veasey.

Mr. VEASEY. Thank you.

I wanted to ask Admiral Manazir a question about training and transitioning from F-18s to F-35s, including the training and retraining of pilots and the maintenance personnel. How will this transition affect the availability of units for deployments?

Admiral MANAZIR. Sir, we are going to initial operational capability the F-35C in August of 2018. There is some risk to that date, but we are planning to that date and on path working with the Joint Program Office to do that.

The first squadron will be ready for deployment shortly after that initial operational capability. We will then go through a heel-to-toe transition of units from generally the F-18C, but some F-18Es and F units will transition through a process that we have mapped out already. And they will do that at Naval Air Station Lemoore in California.

The transition takes about a year to do it. We have that planned into our master aviation plan, which is laid out to support all the deployments necessary to support the combatant commander. So, the simple answer to your question, sir, is that the transition to the F-35C will not affect our ability to provide the combatant commander with the forces that he needs as we go forward to source the global force management plan.

Mr. VEASEY. Thank you very much.

And wanted to ask Lieutenant General Davis a question also about the F-35. I was just curious, what is the plan to follow on development of modernization for F-35s to ensure that the aircraft continues to have the upgrades necessary to maintain a capability advantage over threats through the life of the aircraft?

And—the same thing, I wanted to also—if you could just touch on just the transitioning, as well, as you move from the F-18s and the AV-8s and how that is going?

General DAVIS. It is F-18s, AV-8s, and EA-6Bs; we have two Prowler pilots flying the airplane very successfully right now. One, in fact, is an instructor in VMFAT-501 [Marine Fighter Attack Training Squadron 501] and we picked four EA-6B pilots this last board to transition out of the 16s. So, a quarter of the guys we picked are Prowler pilots to basically make maximum use of the electronic warfare capability of that airplane.

The transition is going well. Again, we just stood up our second operational squadron. We will stand—the next one will be an F-18 squadron that will shut down VMFA-122, will move to Yuma, Arizona, and stand up as an F-35B squadron; then VMFA-314, which will be the first Charlie squadron, in Miramar in 2019.

So, the transition is going well. What we are doing is we are managing the inventory of our AV-8s and our F-18s. The good news, on our readiness recovery, we solved some of the problems we had with Harriers. We have actually burned some—built some margin in Harrier that can keep the Harrier going a little bit longer if we need it to, so we can balance between F-18 and Harrier, which, you know, we sundown next to make those—to make our transition.

Right now, VMFAT-501 in Beaufort, South Carolina, is scheduled to get bigger to handle more students. And so, that is growing. And the production line, really sir, and the spare parts that flows with that, is getting ready to go up to 20 aircraft a year, which we need, just on Bs alone, which we need very desperately.

So, the transition is going well. We are managing that inside the Marine Corps. We are making a little bit of our own luck with better readiness in Harrier, which is good, and then working very closely with the Navy to extract maximum value out of the legacy F-18.

And on Block four—I am sorry—Block four, I think is was you are talking about the capability modernization development. I worked that very closely with Admiral Manazir and my Air Force counterparts to make sure we are getting the very best combat capability for the country.

I think we are close to slapping the table and all that we have put into that modernization program out there but it is actually very exciting. We compete and push to see what we want to put in there in the timeline we get it. We broke it up into four chunks, which is smart to go do.

And bottom line is bring in the great capabilities that the Block 4 upgrades to the airplane as quickly as we can.

Mr. VEASEY. Over the last several years, the numbers of the squadrons that you have, have dropped from about 70 to 55, or so.

General DAVIS. Yes, sir.

Mr. VEASEY. Is that hampering the transition at all, or—

General DAVIS. Well, what we are—sir, we—right now, we are at 20 TACAIR squadrons and we, like the Air Force, came down after Desert Storm. I think we are about 28 TACAIR squadrons during Desert Storm. And over time we are down to 20.

And right now I am 19 because one of my Reserve squadrons is cadred. So making our own luck with F-18 and the Harrier, keeping them robust will allow us to make that transition.

But right now, we are executing a transition in stride and we will shut down—you know, we have basically worked out a long-term training and deployment plan for the Marine Corps so that we can sundown our squadrons and stand up in stride.

And we just did that with VMFA-211, so VMFA-211 came back from combat deployment. There is—the VMFA-121 was a F-35 squadron in Yuma. It grew to be larger than a normal F-35 squadron and then what we did is when 211 stood up, they split off their airplanes they were supposed to have and the maintainers and the pilots so they can be a going concern from the beginning.

We will do that for the rest of the squadrons itself. I will say that the ramp for F-35 in the Marine Corps has been very slow. We are looking very much forward to getting a faster ramp and be able to

stand squadrons up faster and still making all of our operational commitments.

Mr. VEASEY. Thank you.

General DAVIS. Thank you, sir.

Mr. VEASEY. Chairman, thank you.

Mr. WITTMAN. Very good, thank you Mr. Veasey.

We will now go to Mr. LoBiondo.

Mr. LOBIONDO. Thank you, Mr. Chairman.

General West, I know that you know this but some of the others in the room may not, that the 177th Fighter Wing that I represent has a state-of-the-art infrastructure including state-of-the-art alert hangars that can accommodate the F-35 and we hope will, someday.

Admiral, if you have or having challenges with the FAA, I would appreciate knowing a little more about it. I chair the Aviation Subcommittee which has oversight with the FAA. I certainly would be happy to weigh in and get their attention on this if there is something we can do.

And General Davis, a short while back maybe 4, 6 weeks ago, there was a report on one of the cable channels about the cannibalization. Are you familiar with that?

General DAVIS. Are they talking about the F-18, sir?

Mr. LOBIONDO. Yes.

General DAVIS. I am, sir.

Mr. LOBIONDO. They had to go into a museum and get parts and so on and so forth. So is—are we going to see more of that?

What is the status of that? Is it more than just in the Marine Corps? Anybody else or—was pretty disturbing report.

General DAVIS. What I will tell you, sir, is on that—we were looking for a hinge for a nose gear of an old model, A model F-18, no longer in production. And a lot of those airplanes were built in lots and they are all different.

So we do, we have done that in the past, go out and look at a—for a part. And it just so happened that one of the squadron members was out there looking; said hey, that is as close to the bureau number.

It didn't match up but the good news to it in that is there was no part to be had so we 3D-printed the part and then manufactured the part, Okay? And so they—so the company was able to make that part for us.

You also heard on the news that the Marines are also going into the boneyard to get F-18s. We are doing that, sir. We took I think 23 out of Davis-Monthan. But those are 23 airplanes we had put in in 2007 to kind of preserve the life.

We—they are low flight hour F-18s now we will basically—we are bringing them back into service now to go fly them, to go make our operational commitments and it goes back to how we manage the F-18 life to the end of its service life, extract maximum value.

We would like to recapitalize faster, that is what we need to do, that is what we want to do. By the—until that time, we are going to do what we have to do to make our operational commitments with our F-18s and our Harriers.

Right now, my two communities at greatest risk for making their flight hour goals and making their readiness goals is CH-53 Echo and the legacy F-18.

Again, 53 Kilo will replace the Echo and is doing great in tests and the F-35 is going great in its production and its tests and its initial operating capability development out there.

So replacing our F-18s with F-35s as quickly as we can is our strategy.

Mr. LOBIONDO. Mr. Chairman, I yield back.

Mr. WITTMAN. Thank you, Mr. LoBiondo.

We will now go to Mrs. Hartzler.

Mrs. HARTZLER. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here today on this very important hearing dealing with aviation readiness.

Rear Admiral Manazir, I would like to start the question with you. So the committee has heard testimony in prior hearings about a strike fighter shortfall and some of the issues you have to manage as a result.

So how have training hours for Navy and Marine Corps pilots been impacted and do you see an impact to pilot readiness due to the shortfall now or in the future?

Admiral MANAZIR. Ma'am, I will let General Davis answer the Marine Corps question because the impacts to both services while founded in the same challenge are different in how we train.

Strike fighter shortfall we now term as inventory management, so if you have a shortfall that means your supply doesn't equal your demand and so you have to manage that force.

The proximate cause of the strike fighter inventory challenges particularly in the F-18 and the JSF [Joint Strike Fighter] is the JSF sliding to the right. General Davis testified that he wants to see a faster ramp to F-35, to the new, fifth generation fighter.

We want to make sure that there is no delay to the F-35C arriving. But it has slid several years. That has caused two problems. The first one is that we have had to induct more of our F-18 A through D legacy force into the depot.

We didn't plan to do that maintenance and when we opened those airplanes up they had significant corrosion that we did not plan for. And so that created a depot load that we had to change the process and how we manage that. That created shortfalls on the flight line.

The second effect it had was we were over-flying our F-18s, Super Hornets, Es and Fs. We didn't plan to fly them this much nor this early in their life. So it is accelerating the life use on the F-18 Es and Fs.

And in fact, our unfunded priority list—the number one priority from the Chief of Naval Operations is 14 Es and Fs to help cover the gap that we never foresaw between the F-18 C and the F-35.

We are taking—as you know, we do what is called tiered readiness, it is phase-based tiered readiness, I explained it a little bit in my written statement, where the deployers are full up ready to go for any high-end mission. And then the next to go are also trained at the intermediate, advanced level.

Where we see the effects on training, ma'am, are in the early training phases leading up to advanced training and then it is

sustainment when they come home from extended deployment. You will see some of the resources having to be moved to the next deployer.

So on either end of that deployed cycle, that is where we see those hits. That aircraft availability, just exactly what General Davis says, that limited aircraft availability—especially early in the phase—doesn't allow us to train those aviators that are in that phase. And we have to steepen the training ramp to get them up to speed before they deploy. Those are the effects.

Mrs. HARTZLER. How many hours short are you, would you say, for a normal training? If you have optimal training for all tiers to be fully trained, how many hours more are—you need?

Admiral MANAZIR. So it is a—that is a difficult calculation because we—it is almost area under the curve. There is a certain number of hours at the very low maintenance level, its currency hours is just 11 hours per pilot per month.

And then it goes up to the fully deployed to about 27 hours per pilot per month in each type model series. The fiscal year 2017 President's budget request does give us a readiness level that is executable because of the numbers of airplanes.

Sometimes people will say, hey, you need to fly more hours and so we are going to give you more flying hour money. One of the causes of why we are where we are today is money went into flying hours but the underlying accounts, the enabling accounts, were underfunded.

So the airplanes weren't available to fly. So I would rather not tell you that I need more hours. What I need is the fiscal year 2017 submission and the bills that the chairman talked about to get that readiness level up so that we can increase the flying in those lower stages of training.

Mrs. HARTZLER. As you know, we have got the 14 extra F-18s in the NDAA and we are going to try and bring that across the finish line. Is that enough? Would you like more if you could?

Admiral MANAZIR. In the 2017 budget, that 14 remains the request. CNO Greenert testified earlier in 2015 that we need two to three squadrons to fill the gap in our total force with a tiered-readiness model.

We haven't quite got to that point of having all of those squadrons and all of those numbers. As we continue to use the airplanes that we are using, I think you are going to see repeat requests for Super Hornets as we go forward in future year budgets.

Mrs. HARTZLER. Sure.

Nineteen seconds General Davis—has pilot readiness been impacted?

General DAVIS. I will tell you exactly, we are 6 hours—about 6 hours per month per pilot short on the TACAIR fleet, specifically F-18. We fixed the Harriers; they are doing better right now.

We have got one squadron that is in Bahrain that is flying a lot, about 800 hour a month for a 10-plane squadron, so those guys are doing well. But on average, low. We have asked for two F-35Cs and two F-35Bs to help fill our coffers out there.

Our plan is to put our guys in an 8,000-hour airplane, the F-35B and C, and basically take advantage of that full ramp. We have

been having a lot of help from Boeing Corporation to help fix our legacy airplane.

So four things that F-18s—legacy F-18s are down for. They are in the depot. They are—need an in-service repair, which is too much maintenance for my marines to fix. They need the special permissions to go do that. Not mission capable-supply or -maintenance. A large number of our legacy F-18s were on the flight line, needed a minor repair that my marines aren't able to do it, same thing with the sailors.

So we didn't have enough depot artisans to do that work so we took some depot artisans and put them up at Miramar and that has had a palpable and positive impact on my flight line readiness for F-18 in Miramar. We basically hired Boeing—Navy blessed Boeing Corporation folks to go do that ISR [in-service repair] work. It makes sense, they built the airplane, and bottom line is we are getting much better readiness out of the Beaufort effort, as well.

That just started.

So taking those in-service repair airplanes, a large slug of our airplanes, if we could get at that would actually help on my F-18 readiness as they are doing that now. So hats off to Boeing and using the OEMs [original equipment manufacturers], not just for the F-18 but across the spectrum to help increase our readiness wherever we can.

Mrs. HARTZLER. Hats off to all of you for taking a difficult situation and making the best of it.

Thank you, Mr. Chairman.

Mr. WITTMAN. Thank you, Mrs. Hartzler.

We will now go to Mr. Gallego.

Mr. GALLEGO. Thank you, Mr. Chair.

This question is for the Navy-Marine Corps team. Recently, the Marine Corps announced plans to rotate another amphibious readiness group [ARG] or Marine expeditionary unit [MEU] in the Pacific by 2019.

However, when the announcement was made it was acknowledged that sourcing plans had yet not been worked out. While the Navy-Marine Corps continued to maintain a forward presence through aircraft carriers and MEUs for example additional requirements such as two special purpose MAGTFs and this proposed ARG-MEU continued to place additional requirements on the force during a time of constrained resources.

So my question, very simple: How much more operational stress can the Navy and Marine Corps aviation enterprise take within what I described? And also, can we continue to extend our presence under the current readiness projections?

General DAVIS. I can answer part of that. The special purpose MAGTFs—we have one in Spain and one in the Central Command area of responsibility. The reason we did that, 12 V-22s and 4 C-130s, is because we didn't have the amphibious shipping we needed to put out there.

So I could cover down on the requirement with four V-22s if I had an amphibious ship to embark those marines on, but they have got to fly, a lot of times 2,000 miles. So the beauty of sea-based assets, whether it is on a carrier or an amphibious carrier, is you can move that ship around and put it to close proximity of the action

and get out there without a tanker. It could fly there without a tanker.

So the fact that we don't have the ships does add to wear and tear on airplanes like the V-22 and C-130s. So I would have more amphibious ships. I know this is an aviation hearing. I would have a—my guys go off the ships and off the expeditionary bases ashore. But that helps us get closer to the objective area, so more of that would be certainly helpful, sir.

Admiral MANAZIR. Okay, Mr. Gallego, the Navy works closely with the Joint Staff to source a global force management plan. We currently are resourced to deploy two amphibious readiness groups and two carrier strike groups. It will take us to about the end of this Future Year Defense Plan, 2020 to 2022, to be able to resource a third deployed amphibious readiness group. So our current capacity is two amphibious readiness groups.

Mr. GALLEGO. Excellent, thank you.

General Davis, we spoke a little bit earlier under—from questions from another Member of Congress regarding parts. But you have advocated for resizing the spare parts account to increase readiness. Such a change would ensure more parts are on hand instead of waiting on the supply chain. Can you describe how much additional funding you think it will require in future years, and whether this would demand a policy change in how spare parts programs are maintained?

General DAVIS. I can get you the exact number, sir, but that is something we are looking at. This year, you can see from our unfunded priorities list that we ask for help on spare parts, specifically F-35. They have been underfunded and that has an impact not just in the year of execution, but it is 3 years later when those parts are supposed to be there to make sure we get maximum value out of that.

But I think in the aggregate, we could look at how we spare our programs in the Department of Defense. I don't know any airline out there that has got a not mission capable-supply target anything other than zero percent. So we have these great airplanes, but we put a marine out there or a sailor, soldier, airman, and they don't have enough parts.

If your target is 10 percent non mission capable-supply, I am worried about that 10 percent. Where do they get that part? It has usually got a bureau number written on it.

And then airplanes like the CH-53, we had marines for a number of years who would go to an airplane that couldn't fly and take the part off the airplane. These are great maintainers. I worry about the pilots and retaining pilots. I worry about my enlisted marines, my enlisted maintainers. Those are the guys if I have got to focus on retaining anybody, I am going to retain them; give them the tools, not just the tools in the shop, but the pubs, but also the parts they need to be—to extract maximum readiness out of the platforms we have.

I will come back to you, sir, and tell you exactly what I think they would cost, but it is the cost of low readiness is, I think, something our Nation can't afford. And if having that airplane, as great as the airplanes we are all procuring out here, to not have a part for it is kind of crazy.

Mr. GALLEGO. Thank you.

Mr. WITTMAN. Thank you, Mr. Gallego.

We now go to Mr. Lamborn.

Mr. LAMBORN. Thank you.

We have all known for some time that readiness is a big problem and including a recent focus by this committee, under the leadership of Chairman Thornberry and Chairman Wittman.

So from an Air Force perspective in particular, recently the Thunderbird crash in my district, along with the tragic loss of life in the Blue Angel crash the very same day, really got people's attention.

These tragic events, along with other recent crashes, have caused the American people to ask a lot of questions including: Why did these crashes happen? And what can we do to prevent this in the future?

The answers to these questions are undoubtedly complex. But getting the right answers and taking the right action is vitally important. The very lives of our aviators depend on it. And also how well prepared we are to fight a war if necessary.

So I know it is your job in the military to make the most of what you have and to carry on with the mission regardless, but I really ask for the maximum frankness and being candid on your part.

So, General West, what are the trends in Air Force mishaps over the past 8 to 10 years?

General WEST. Thank you, sir. We haven't seen a correlation between mishap rates and our readiness concerns now over the last 10 years.

Mr. LAMBORN. We have or haven't?

General WEST. Have not. Our mishap rate is about the same, trending down, as it has been over 10 years. That doesn't mean that the goal for mishaps is not zero. We don't want to lose a single airman or lose equipment. But we don't have a correlation because of our readiness issues that would seem to indicate that either human factors, largely driven by complacency, operations or maintenance, or material failures of operating systems that are decades old, are having—they have an affect on readiness.

But we haven't seen that the trend data shows that they have had an affect on safety. That doesn't mean we don't pay attention to safety. In every case, we do conduct two investigations afterward—one safety for the safety privilege reasons; the other for legal purposes. And those—the legal one is public knowledge. The safety one under privilege is meant to uncover things with privilege so that we can take action quickly, if necessary.

Mr. LAMBORN. Okay, well let's focus then on readiness in particular now. How many hours did the average pilot fly 10 years ago versus today, as far as you know? And is there a difference in either flight hours or maintenance or the age of aircraft 10 years ago versus today? How would you summarize that?

General WEST. Yes, sir. Well the—I don't mean to be flippant at all, sir. They are 10 years older, the aircraft, obviously. And that comes with the challenges of when you perform depot work, you are going to discover things that weren't anticipated because the original service life wasn't intended to be this many decades old.

And we make choices of sustaining legacy systems within a certain amount of budget, with modernizing for the future.

So the longer we sustain systems that are older, then the closer we get to where they will no longer be relevant in combat because of other systems that are fielded by potential adversaries. So we have to make choices.

Mr. LAMBORN. Now if the replacement rate is equal to the rate at which they are being mothballed, there would not be—the average would not be 8 or 10 years older. It would be constant.

General WEST. Yes, sir.

Mr. LAMBORN. But you are saying that that is not the case; that the average rate is now 10 years older versus 10 years ago, of the aircraft?

General WEST. That is the way it is going to be outside of the ISR [intelligence, surveillance, and reconnaissance] community, which MQ-1s and MQ-9s are a brand new weapon system. But we continue to operate A-10s, F-16s, B-52s, B-1s, B-2s, KC-135s, KC-10s. It is the same fleet that we have operated successfully for years.

We will have a large modernization effort that will come forward in the 2020s, B-21, KC-46, the bulk of the F-35s, et cetera, for a long period to come. But right now the fleet is aging.

Mr. LAMBORN. Now as aircraft reach their expected life, or exceed their expected life, what happens in terms of maintenance or flying hours and things like that?

General WEST. We conduct a service life extension program to extend the life of the aircraft. It varies by aircraft what that entails technically. But we extend it by some number of thousands of hours, and we work at how long we want to extend the service life based on when we expect a replacement to come into play.

If I could go back to your question about hours. The hours are a concern for training, but more important than just the hours that crews get, are the intensity of training during those hours. Our crews get excellent training to be able to go down range and conduct ISR, strike, airlift, close air support, electronic warfare.

What we are not able to do with the training hours we get in the United States is sufficiently prepare them for combat with that near-peer competitor. That is a different level of intensity that requires investments along five different fronts, first starting with the maintainers to be able to do it.

And that is a different dynamic from events when you are training versus just hours. Our crews get a lot of hours down range. But that is not the same level of intensity.

Mr. LAMBORN. Thank you very much.

Mr. WITTMAN. Lieutenant General Davis, I wanted to follow up on some of the comments that you have made concerning training hours. You have talked about making sure that you had maintainers that were capable and that you were short in the amount of seat time that pilots had, real flying time, not simulator time, and talked about needing to have that ready bench, and that when you lack aircraft to train pilots and train maintainers that ready bench gets pretty thin, and in some instances non-existent.

I wanted to, and you spoke earlier about Class A mishaps. I do want to try to drill a little bit deeper. We know about a year or

so ago, there was a tragic CH-53 accident off the coast of Hawaii; challenging conditions. But that being said, in talking about those shortfalls that you have there in making sure maintainers have what they need, making sure pilots have that seat time. And I know that the investigation for that accident is coming to its completion.

Can you maybe talk a little bit specifically about that? Do you believe that the elements that you spoke about in the training side, both maintainers and pilots, could have had any impact in that particular accident?

And I know we can look at rates, but I want to be able to look at specific recent instances, because I think that is what Mr. Lamborn had spoken about, what we are hearing from folks about the concern about that particular situation.

And whether it is the tragic accident with the Blue Angels pilot, the Thunderbirds pilot, whatever it may be, the question becomes as we highlight these shortfalls, what association might that have with this? And I want to ask you specifically about that incident because I know there are a lot of different conditions there that were at question.

General DAVIS. Yes, sir, thank you for the question. As you know that investigation is still underway and I don't want to do anything to get out in front of what they might tell us.

I am highly confident that that crew was flying good airplanes, that both crews were flying good airplanes, they were properly maintained, and it is a tragedy.

I mean this is a real tragedy, all of our losses to include the Blue Angels, tragedy. Here is what I worry about the most, if I had to kind of step back from this. That crew was safe but that crew could have been a lot more proficient at the combat mission that it is on task to go execute. So I don't know how well trained they would be to go fight the high-end fight.

They were doing what was a pretty straightforward mission that night. Tragedy though. I worry about my young aviators that aren't getting the number of hours they need to. And so it is the mishap that looms on our bow that we don't see coming just now.

I remember that as a young guy I had a couple close calls; as I young guy I had some close calls. I do not know how I would do having the amount of flight time that my youngsters get. And I have got two sons that fly Marine airplanes.

They're not complainers, but as a dad I worry about it. They're just not getting the looks at the ball that I got. So when that bad thing happens to them, or when they're a flight lead, and they're trying to take somebody out there and a bad thing is happening to the youngster that they're leading, man or woman, will they have the experience to keep that bad thing from happening?

Saying I see this, I know this, I feel this—I know the science of aviation but you have me up here, General Neller has me, to understand the intuition and the sense of aviation as well. We are not where we need to be. So we are proficient but we are not as good as we need to be because we don't get the number of hours that we need to get because there is just not enough inventory there.

You know, the old days when I was a lieutenant, it was 75 percent mission capable rates, those were all the numbers we knew. I will tell you that in order to get to 75 percent mission capable, I would need about another 366 airplanes in the Marine Corps that, they are there, they don't exist, they don't have parts, they are stuck in a depot, or they are on a production line someplace coming to us. I think I can—I can't make a direct line to the Class A, but there is risk there by not flying and not building the experience out there.

It has not been borne out in an investigation. It doesn't mean that a mishap investigation 3 years from now isn't going to say that this person here did not have the experience they needed to get as a young captain and now he is a major or she is a lieutenant colonel, squadron commander, and she just didn't see this before because she didn't have the experience. So I would worry about the stuff that looms in our bow sir.

Mr. WITTMAN. Thank you General Davis, and I want to kind of tie a string between each of these instances that you all have highlighted today. And we will start there in the Marine Corps. You have spoken about the shortfalls that are there with maintainers, aircraft to maintain, the ability for that experience with our maintainers and with our pilots all manifesting themselves in different ways.

General Mangum, you spoke about the same thing. Situation where if a helicopter is deployed in Afghanistan, maintainer is back home. That creates an atrophy there in that force in that capability that not only will we see today, but as you spoke of, we will probably see in years to come. General West you spoke of the same thing there.

A shortage of maintainers in the Air Force. Making sure too, that we have the senior NCOs [noncommissioned officers] there in the Air Force that are the backbone of training, the new airmen that come in to be able to maintain those aircraft. Making sure, too, we are transitioning from maintainers that are on an A-10 aircraft to the new F-35 aircraft. You know all of that, creating a challenge, a deficiency I would say within the realm of what we need to have.

Admiral Manazir, you spoke of, too, the element there of what you are dealing with today, going from a backlog of 12 F-18s to now nearly 200, with legacy aircraft and Super Hornets, getting them to that depot.

We have flown those aircraft more than we expected, therefore when they get to the depot we are having to do much deeper maintenance, maintenance that really wasn't originally designed to be done at the depot level, but you all are managing to get that done.

There is a common theme here we see across the realm here, we are pushing harder, we have fewer resources, we have fewer of the skilled people in the necessary positions to do all the things that we need to do to make sure that we are not just rebuilding that readiness, but maintaining the current level of readiness.

To me, that is a very, very deeply concerning issue. I know the chairman and myself, as well as members of the committee and the ranking member all have a deep level of concern.

And while it may not show itself directly today in the rate of mishaps, I do believe it exhibits itself in additional risk for the brave

men and women that serve in our Air Force, our Navy, our Army, and our Marine Corps. And to me, that is deeply, deeply disturbing.

And as you know, that bow wave that happens with that many times doesn't manifest itself until months or sometimes years into the future. I think our obligation on this subcommittee, as well as the full committee, is to make sure we understand the full scope of that, understand the challenges that you all face which you have very eloquently stated to us today, but then make sure that we get from you what do we need to do?

Now, we talk about preparing the conditions to restore readiness. I mean, that is just building the foundation so you can actually begin to build the house, as I put it. You know, this is about building that two-story house. We are just right now building the foundation. We can't even talk about the materials that we need to actually build the structure of the house.

That is my concern and we need to understand not only what we need to do to continue that effort, but where do we go and where do we make sure we get there in the shortest amount of time possible.

This is also an issue not only of resources, but also of capacity. You know, even if we were tomorrow able to write the check, which we at this time can't, but if we were, the issue is of pipeline capacity. Even if we wanted to, there is only so much that you can do to get to that particular point. So you know, our thrust from this hearing is to make sure we get from you not only where those shortfalls are, but what do we need to do to continue on that path of creating the conditions to rebuild readiness and then how we expect to get there as quickly as possible because the shorter time it takes for us to get there, the less reverberation of effects that we will see years down the road.

And we absolutely want to be able to prevent that with everything that we have and we have to be able to, as Mr. Scott spoke about—we have to be able to communicate this with folks that are not on the Armed Services Committee. I think most of the folks on the Armed Services Committee get it, they understand the concept of readiness.

But other members don't, so we have to be able to take from you the headlines that they read about mishaps or shortfalls in aviation across the spectrum and say okay, what are the things that we need to do to be committed as a Congress to get those things done? Maintainers, pilots, air time, experience in maintaining, all those elements, and I think people intuitively get that as long as we can provide them the specifics of that.

So our challenge is to make sure that we get from you, as an outcome of today's hearing, in order to be able to do that. And I know Mrs. Hartzler has another question that she wants to ask that I think is within that realm and I want to make sure that we give her that opportunity.

Mrs. Hartzler.

Mrs. HARTZLER. Thank you, Mr. Chairman for the additional time. Well said. The purpose of this hearing and the importance of this hearing, not only for our current readiness but also as we look

to the future and future platforms that are being developed, maybe lessons learned and that is where my question is focused.

The excellent airmen at Whiteman Air Force Base know a little bit about readiness, and certainly, they have done an amazing job in keeping the B-2 aircraft viable and mission-capable even though there are only 20 aircrafts and they have had issues with parts, sustainment and now, they are doing the DMS [Defensive Management System] modernization all at the same time. But yet, they are doing a great job.

And I just wonder, as we look to the B-21, this question is for General—Major General West—as we look to the B-21 being developed, what lessons learned are you gleaning from the B-2 that can be a part of the sustainment plan for the B-21 going forward?

General WEST. I would say—I am not that closely connected to the B-21 program. But we want the systems that we procure in the future to the max extent possible to use proven technologies that reduce the amount of time it takes to field and reduce the cost as efficiently as possible, while at the same time, fielding systems that are going to be relevant in combat for years.

And there is risk with both to be able to do that. We want to make them as maintainable as possible. We have made great strides in maintaining stealth from the original platforms to F-117 to F-22. Now, F-35 is much more maintainable; it will be in the future. We are going to have to be able to share and fuse information for B-21 crews just the same as we are going to be able to do with the F-35.

And long-term lifecycle costs have to fit within our requirement to have to modernize many other systems, KC-46, F-35s, weapons associated with platforms to go with it. It all has to fit within a certain top line.

So the lessons—not necessarily from B-2, but just in general is—it is the entire life cycle and it has got to be able to perform in combat for decades because it is likely we will operate the B-21 just like we have other platforms and they have to be relevant for a long time.

Mrs. HARTZLER. Certainly, having an increased number of airplanes manufactured will be a big help. At this point, we are projecting 100, from what I have read. But yet, I have also read that that is a little bit short, that other people are saying that we need about 174 to 205 B-21s.

Do you have any insights into that issue?

General WEST. No, ma'am. I don't. I will have to take that for the record.

[The information referred to can be found in the Appendix on page 85.]

Mrs. HARTZLER. Okay. Well, thank you for what you do.

Thank you, Mr. Chairman. I yield back.

Mr. WITTMAN. Thank you, Mrs. Hartzler.

I want to thank all of our witnesses today, General Davis, General Mangum, General West, Admiral Manazir. Thank you so much.

I also want to thank, too, the officers from your staff that are here. I know they are extraordinarily valuable in things that they

do to provide the information collectively to us today. So I want to thank each and every one of you.

I assume we have some junior officers here today, too, so they are certainly seeing and hearing things that they will be dealing with in the years to come.

So we appreciate everyone here. Thanks—thank you so much for your leadership and providing us a perspective that we need to make sure that we are making the right decisions to support the great job that you do.

Please thank all of your great airmen, marines, soldiers, and sailors for the job they do in maintaining our aircraft and the job that they do in keeping those aircraft in the air and the job they do in piloting those aircraft. We have absolutely the best in the world and please thank them on our behalf for that.

And with that, our subcommittee is adjourned.

[Whereupon, at 11:51 a.m., the subcommittee was adjourned.]



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**A P P E N D I X**

JULY 6, 2016

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**PREPARED STATEMENTS SUBMITTED FOR THE RECORD**

JULY 6, 2016

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**Statement of the Honorable Robert J. Wittman  
Chairman, Readiness Subcommittee  
“Aviation Readiness”  
July 6, 2016**

Good morning. Thank you all for being here today for our Readiness subcommittee hearing on the Military Aviation Readiness. This past year, this subcommittee has heard testimony from each of the Services concerning Readiness and as part of that testimony – the impacts on military aviation. In separate hearings on infrastructure readiness, both Admiral Mary Jackson and General Azzano testified about aircraft hangar fire suppressions systems that were unusable and inadvertently activated. At the Air Force hangar at Eglin Air Force Base, this resulted in an unusable hangar for nearly 3 months; the impacted portion of the Navy hangar remains unusable – 17% of the hangar space. The Marine Corps and Army face similar facility challenges. 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 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 Jon M. Davis, USMC  
Deputy Commandant for Aviation

Lieutenant General Kevin W. Mangum, USA  
Deputy Commanding General, U.S. Army Training and Doctrine  
Command

Major General Scott D. West, USAF  
Director of Current Operations

Rear Admiral Michael C. Manazir, USN  
Deputy Chief of Naval Operations for Warfare Systems

Thank you all for testifying today and we look forward to your thoughts and insights on the readiness challenges of military aviation.

I would now like to turn to our Ranking Member, Madeleine Bordallo, for any remarks she may have.

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HOUSE ARMED SERVICES COMMITTEE  
READINESS SUBCOMMITTEE

STATEMENT OF  
LIEUTENANT GENERAL JON M. DAVIS  
DEPUTY COMMANDANT FOR AVIATION  
BEFORE THE  
READINESS SUBCOMMITTEE  
OF THE  
HOUSE ARMED SERVICES COMMITTEE  
ON  
AVIATION READINESS AND SAFETY

July 6, 2016

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

Chairman Wittman, Ranking Member Bordallo, distinguished members of the House Armed Services Subcommittee on Readiness, and other distinguished members, we appreciate the opportunity to testify on the current state of Marine Corps Aviation readiness. The Marine Corps' Title 10 responsibilities are 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.

We are going through a period of risk for Marine Aviation. Since the end of official combat operations in both Iraq and Afghanistan, we have thus far been able to fulfill our responsibilities and make our steady state Global Force Management operational commitments by risking the readiness of squadrons remaining in the United States. Squadrons deploy on time with the required training and readiness levels to be safe and meet the minimum for tactical proficiency (T2.0). However, these deploying squadrons, along with those next to deploy, are the "Fight Tonight" force. In fact, 13 of the last 27 squadrons deployed at a T-rating less than 2.0. Marine Corps aviation is designed as a lean but highly ready force. We don't do tiered readiness. We can't afford to since our squadrons are always ready to deploy. We are designed to do a lot with a little – and the only way we can do that is to maintain the required levels of flight line inventory, and ensure those aircraft have the spare parts and quality maintenance we need to meet our force in readiness requirements. Today, there are not enough flyable aircraft – our "Ready Bench" – if our nation were subjected to a crisis. Today, I could fly 43% (443 of the 1040) aircraft I should have on my flight lines. That leaves the Corps shy of being able to meet our wartime commitments; and in the steady state, high Optempo environment we find ourselves in today – we have to make some very tough decisions to make our deployments and burn down risk for those next to deploy. One of the things we had to do was to temporarily reduce the

number of FA-18s, Harriers and CH-53Es in my gun squadrons because we simply didn't have enough of them. We went from 12 to 10 FA-18s, 16 to 14 Harriers and 16 to 12 CH-53Es. This reduction has caused pilot hours per month to fall below the T-2.0 monthly requirement in the FA-18 (15.7 hours), Harrier (15.4 Hours), and CH-53 (15.1 hours) by 5.9, 4.4, and 4.9 hours respectively. Our Commandant, General Neller, and I are deeply concerned about the current state of our Aviation readiness. This is what keeps me up at night.

Deterring global instability, near peer competitors, conducting counter terrorism missions and keeping the peace has increased Marine Aviation's deployment tempo. Our FA-18, AV-8, MV-22 and KC-130 units are, on average, at a Depth to Dwell of 1 to 2. That is technically a surge condition – and we have been operating at this tempo for many years. A 1 to 2 deployment tempo means if the unit and its Marines have a six month deployment, they will only be home for 12 months before being deployed again. To keep this in perspective, the optimal Depth to Dwell ratio is 1:3, or 18 months home to every 6 months of deployed. The last time we had a 3 to 1 ratio was before Operation Iraqi Freedom – 13 years ago. In addition to this stress on the force, we are halfway through replacing our entire fleet of aircraft. We are in stride replacing our legacy fleet with state of the art, game changing, war winning aviation platforms such as the MV-22, F-35 B and C, H-1Y and Z, KC-130J, MQ-21, G/ATOR Radars and soon CH-53K.

It is also important to note that we are operating in a resource-constrained environment. Marine Aviation continues to make challenging decisions and tradeoffs throughout this process. We are balancing the need to have our current fleet as ready and modern as possible, to train our pilots and maintainers, and to out match any current foe on the battlefield, while at the same time having the necessary resources to fund the continued essential recapitalization of our legacy aircraft – the oldest in the Department of the Navy. Our Optempo, force in readiness

requirements when matched with our low inventories and readiness of our legacy fleet, mandates that we recover our legacy fleet's readiness while we simultaneously recapitalize at the most expeditious rate possible. We simply cannot get into new iron quickly enough.

#### Readiness

**The health of our Aviation Force is measured in aircrew flight time. Average aircrew flight time has reached historic lows. Every lost day, every missed hour, is missed experience this Nation depends upon in the future. Our shortfalls are due to a lack of ready aircraft.**

There are several reasons for this lack of flyable aircraft. Outside of our need to recapitalize (replace old worn out aircraft at the end of its service life), our aircraft suffer poor readiness for four reasons: They are stuck in a Depot awaiting repairs, they are in need of an In-Service Repair (a task Marines are not qualified to perform), it is awaiting organizational level maintenance (Not Mission Capable Maintenance)– and lastly it doesn't have the parts it needs to fly (something we call not mission capable – Supply). In my mind the last one is one of the most impactful – both in keeping a large number of Marine aircraft on the ground – not flyable. Additionally, the spare parts (NMCS) problem leads to higher not mission capable maintenance rates – because my Marines will take parts off squadron aircraft to make a “whole” bird since they can't get the part from supply. In essence they will do three times the work to get that part on an aircraft – and the other bird is now “harder” down.

The ready aircraft, for our crews, are supported by numerous Marines, Sailors, civilians, and contractors. They provide for the fleet parts, logistics, facilitating processes, and a training pipeline for Marines to fix and fly the aircraft. Healthy aircraft rely on parts and Marines.

Aircraft on the flight line may require **in-service repairs**. These repairs require an artisan to correct or fix an airplane. Artisans are only found at the depot and are fielded to conduct the repairs upon request. These aircraft sit on the flight line awaiting corrective actions.

To meet in-service repair requests, aviation depots must divert workers from scheduled depot maintenance efforts. Currently, depot capacity is unable to meet demand and dispatching artisans to conduct in-service repairs further exacerbates this problem. Aviation depots are hiring artisans in an effort to increase capacity, but this takes time.

The Fleet Readiness Centers (FRCs) and the **Navy's aviation depots** have been challenged to recover full productivity after hiring freezes, furloughs, and overtime restrictions in FY2013. Through a concerted hiring effort with the support of congressional budgetary increases, the recovery in maintenance capacity continually improves. However, the FRCs face a significant backlog of work, particularly for the service life extension of our legacy F/A-18 Hornets. FRCs hiring progress returned to pre-sequestration manning levels in FY2015 and they continue to adjust hiring in order to ensure the workforce can meet the workload demand. In an effort to improve throughput, FRCs are contracting additional private sector support. Even with these improvements and focus on the Depots, the Marine Corps does not expect to eliminate the backlog of legacy F/A-18s until FY2019.

The legacy F/A-18s make up the bulk of the Marine Corps' TACAIR fleet and have been challenging to manage. The scale of this backlog and the **maintenance** delays are seen across the TACAIR community. The current primary mission aircraft authorized is for 264 airframes across

all of our TACAIR squadrons (F-35B/C, F/A18 A-D, AV-8B, EA-6B). Currently, Marine Aviation only has 141 total flyable TACAIR aircraft, this equates to only 54% of the requirement. We will replace all of these aircraft with the F-35 and we have started to stand-up squadrons – and the new birds can't come to us soon enough.

**The Naval Aviation Enterprise is actively correcting, tracking and managing depot, supply, and in service repair efforts. The Marine Corps is actively improving our maintainer qualification depth and tracking it in more detail.**

#### Inventory

The Marine Corp lacks sufficient aircraft inventory. In regards to low inventory or low numbers of flyable aircraft, the FA-18 and CH-53E communities are the ones I am the most concerned about.

For the FA-18, I should have 12 squadrons with 12 flyable aircraft in each – plus a relatively large (39 aircraft) training squadron. The total requirement for USMC FA-18s is 183 flyable aircraft. Today, I have 83 flyable FA-18s. We are working to recover those aircraft – but it will take time and when I get them back they are still old birds. They are not as reliable as they were when they were new – and our 15 year FA-18 is an average of 26.6 years old. Our oldest is 31 years old. We don't retire the FA-18 for another 14 years. For our CH-53E fleet, we should have 200 airframes in our inventory. After years of hard war time use, we now have only 146 total airframes and of those I can only fly 47 today. We are engaged in an effort to "reset" each and every one of the CH-53Es in waves of 16 aircraft (we completed our first just last month). Each reset takes 120 days – but we get a full up, high readiness bird on the backside. That reset will not be complete until 2019.

The low aircraft inventories and flight line readiness impacts our ability to not only deploy for a crisis – it impacts our ability to train our crews. We do not have enough airframes in our inventory to both train and fight at our current pace, let alone if a surge was required.

This affects far more than just the Marine Corps' steady state operational requirements. In some of our wartime operational plans, the requirements that will be placed on the Marine Corps will equal upwards of 75% of our force structure. In a "Fight Tonight" scenario, the Marine Corps does not have enough ready airplanes.

#### Flight Hours

FY2014 and FY2015 lower readiness resulted low flight hour execution. In FY2016, increased demands to fix aircraft have increased costs and we enacted flight hour funding short of requirements to focus on repairing the fleet. FY17 flight hours were reduced to allow investment into readiness enabler funding. The USMC took risk accepting lower flight hours to balance funds available.

Funding flight hours requires balanced investments across readiness enabler accounts. If these accounts are underfunded then readiness recovery is slower. An example of a major readiness enabler account is Aviation Systems Support. This area covers many accounts, but the largest is 1A4N. 1A4N provides a host of support funding which incurs specialized logistics software development and/or technical publications. This account is critical to properly fund so the Marines on the flight deck will associate the correct part and or updated procedure. This reduces errors and speeds the return of aircraft to a ready condition. All readiness enabler accounts, to

include the flight hour program, must be funded to match flight hour execution to ensure the readiness recovery trajectory continues.

#### Safety

Mishaps are tragic part of the business of aviation. We constantly strive for safety and a lower mishap rate whenever and wherever possible. But Aviation is inherently risky and our aviators and aircrew operate our aircraft at the limits of the machine's capability and their own. It is important to note that while we have lower readiness rates, the aircraft that do fly only do so if they are air worthy and safe.

Class "A" mishaps occurred this year that have tragically resulted in the loss of life. However, when we look at our historical data on Class "A" mishaps, we have found that recent trends are in line with our historical norms. We cannot draw a correlation to the lack of readiness and flight time, with an increase in Class "A" mishaps. We have, however, seen an increase in less serious accidents; both Class "B" and Class "C" level mishaps. We are seeing more "aircrew error" mishaps than those attributed to "material failure" – and that is something the Wing Commanders and I are looking at closely. I worry about our inability to fly and mature our pilots and aircrew. Whatever experience they don't get now, means they will be a less proficient flight leader, supervisor and teacher/instructor tomorrow. I worry about the long term impact to the overall efficiency of Marine Aviation from our human capital side of the ledger. Today's crews just aren't getting the experience they need to be really good (experienced) flight leads tomorrow.

#### Independent Readiness Reviews (IRRs)

Given the seriousness of our Readiness problems, Marine Aviation has and continues to conduct comprehensive IRRs of all aircraft. We have completed two IRRs on the AV-8B and CH-53E, are completing the MV-22 this summer. We will begin the H-1 review later this summer. These reviews bring in qualified outsiders, led by former flag officers, to take an unbiased look at our programs and how they are doing business. We take their recommendations very seriously and have already started to see results as we implement their suggestions. What we have found, in Marine Aviation, is there is no **one** standard strategy to recover the readiness of all of our aircraft. Each type/model/series needs a tailored recovery plan – and we have 3 in execution right now. They revolve around four areas: people, parts, process, and funding in different amounts.

We have already seen movement in the AV-8B Harrier fleet and have started to move the needle back towards achieving our readiness goals. **We started this process with only 40 Harriers out of 97 flyable with a goal of 66. Today, we have 70 Harriers flying.** We also started this spring on the CH-53E reset program, which Congress funded last year, to ensure that we could get every one of our airframes back up and flying. We expect to cycle each of our CH-53s through this process over the course of the next three years. This will allow the CH-53 fleet to be as healthy as possible until we bring its replacement, the CH-53K King Stallion. The King Stallion will reach IOC in 2019.

#### Conclusion

The Marine Corps is dedicated to being the best stewards of the taxpayer's money and we will get everything we can out of the aircraft that we fly and fight today. We are excited with the new aircraft we have received like the F-35B and in testing our new CH-53K. In their last WTI

course our F-35Bs proved that we have a war winning capability in our hands. The CH-53K just lifted a 27,000 pound external load, and it continues to make steady progress in flight testing. Thank you so much for helping us bring these new capabilities into the Corps. While we will extract every ounce of capability out of these new birds, we will do the same with our legacy fleet. We will do this by executing our readiness recovery plan initiated two years ago, protecting our readiness enabler accounts and ensuring that our Marines have the proper spare parts, balancing depot workload, and completing needed evolutions such as the CH-53E reset program to get as many airframes back in the hands of the war fighters as we can.

In addition to our readiness accounts, **we will highly scrutinize modernization investments** and keep our older platforms healthy. In some communities, such as the CH-53E, we will never have enough aircraft to meet our requirements. The only way to fully recover readiness and meet our responsibilities is our continued transition to new aircraft. The Marine Corps needs to continue to buy our new aircraft as fast as we can to not just relieve pressure on our legacy platforms, but to give your “Fight Tonight” force the instruments that give pause to our most capable near peer and afford our civilian leadership the required decision space.

The Marine Corps has studied readiness, has a plan which is showing benefits in the fleet and will continue as a capable force. A balanced approach is our only option within the current Marine Corps’ top line.

**Lieutenant General Jon M. Davis**  
**Deputy Commandant for Aviation**

Lieutenant General Jon M. Davis assumed his current position as the Deputy Commandant for Aviation, Headquarters Marine Corps in June 2014. Commissioned in May 1980 through the PLC Program, LtGen Davis completed the Basic School in August 1980, and then reported for flight training. Upon receiving his wings in September of 1982, he was selected to fly the AV-8A Harrier.

He reported to VMAT-203 in October 1982, completed Harrier training and reported to VMA-231 in 1983 where he deployed aboard the USS Inchon. In 1985 he transferred to VMAT-203 serving as an instructor pilot. In 1986 he attended the WTI course at MAWTS-1. In 1987 he transferred to VMA-223 serving as the "Bulldogs" WTI and operations officer. From 1988 to 1991 he served as an exchange officer with the Royal Air Force. After training in the United Kingdom, he deployed to Gutersloh, Germany for duty as a GR-5/7 attack pilot with 3(F) squadron. From 1991 to 1994 he served as an instructor at MAWTS-1 in Yuma, AZ. From 1998 to 2000 he commanded VMA-223. During his tour, VMA-223 won the CNO Safety Award and the Sanderson Trophy two years in a row, and exceeded 40,000 hours of mishap free operations. After completing the Executive Helicopter Familiarization Course at HT-18 in Pensacola in 2003, he was assigned to MAWTS-1 where he served as Executive Officer and from 2004 to 2006 as Commanding Officer. From 2006 to 2008 he served as the Deputy Commander Joint Functional Component Command -- Network Warfare at Fort Meade, Maryland. He commanded the 2nd Marine Aircraft Wing from July 2010 to May 2012. From May 2012 to June 2014, he served as the Deputy Commander, United States Cyber Command.

His staff billets include a two year tour as a member of the 31st Commandant's Staff Group, and two years as the Junior Military Assistant to the Deputy Secretary of Defense. In 2003, he served as an Assistant Operations Officer on the 3rd Marine Air Wing staff in Kuwait during Operation Iraqi Freedom. In 2004, he served in Iraq as the Officer in Charge of the 3d Marine Aircraft Red Team. He served as the Deputy Assistant Commandant for Aviation from 2008 to 2010. In the course of his career he has flown over 4,500 mishap free hours in the AV-8, F-5 and FA-18 and as a co-pilot in every type model series tilt-rotor, rotary winged and air refueler aircraft in the USMC inventory.

LtGen Davis graduated with honors from The Basic School and was a Distinguished Graduate of the Marine Corps Command and Staff College. He is a graduate of the Tactical Air Control Party Course, Amphibious Warfare School, Marine Aviation Weapons and Tactics Instructor Course (WTI), The School of Advanced Warfighting (SAW), and Johns Hopkins School of Advanced International Studies (SAIS). He holds a Bachelors of Science from Allegheny College, a Masters of Science from Marine Corps University and a Masters of International Public Policy from Johns Hopkins.

His personal decorations include the National Intelligence Distinguished Service Medal, the Defense Superior Service Medal (two awards), the Legion of Merit (two awards), Meritorious Service Medal (three awards), Navy Commendation (three awards) as well as other campaign and service awards.

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**RECORD VERSION**

**STATEMENT BY**

**LIEUTENANT GENERAL KEVIN W. MANGUM  
DEPUTY COMMANDING GENERAL,  
U.S. ARMY TRAINING AND DOCTRINE COMMAND**

**BEFORE THE**

**HOUSE ARMED SERVICES COMMITTEE  
SUBCOMMITTEE ON READINESS**

**SECOND SESSION, 114<sup>TH</sup> CONGRESS**

**ON AVIATION READINESS**

**JULY 6, 2016**

**NOT FOR PUBLICATION UNTIL RELEASED BY THE  
COMMITTEE ON ARMED SERVICES**

**STATEMENT BY  
LIEUTENANT GENERAL KEVIN W. MANGUM  
DEPUTY COMMANDING GENERAL,  
U.S. ARMY TRAINING AND DOCTRINE COMMAND**

Chairman Wittman, Ranking Member Bordallo, and distinguished Members of the Subcommittee on Readiness, I appreciate the opportunity to appear before you to discuss the state of Army Aviation readiness. I am pleased 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 asymmetric advantage for our Nation, without peer in scale and capability, focused on ensuring the joint air-ground team and Combatant Commanders have required reach, protection, lethality and situational understanding to win in an increasingly complex world, regardless of conditions. Army Aviation's asymmetric advantage is underpinned by our most important assets—agile, adaptive and professional aviation leaders and Soldiers.

To maintain this asymmetric advantage, our number one priority must be combat readiness. Army Aviation combat readiness is a function of fully trained and proficient units, led by trained leaders, with sufficient aircraft, in quantity and quality, to win in a complex world as an integral member of the combined arms air-ground maneuver team. Your Army's Aviation force has performed magnificently during the current distributed counterinsurgency fight, but is at risk for the higher end force on force fight we must be prepared to face in the future.

The United States Army retains the largest, most modern, and best-trained aviation force in the world. Over the past 15 years, Army Aviation was tested in a variety of operational environments and as always, Soldiers, Non-Commissioned Officers and officers met the task. Nevertheless, recent force structure reductions, a steady demand for Aviation forces throughout the world, budget uncertainty and greater emphasis on collective readiness raised some areas of concern. Among them, Army leaders expressed concern about the number of catastrophic Class A accidents in the first

quarter of Fiscal Year (FY) 2016 that could be an indicator of readiness issues within the Aviation force. The combination of these operational, strategic, and budgetary challenges resulted in Army Chief of Staff, General Mark Milley directing a Holistic Aviation Assessment Task Force to conduct a comprehensive review of Army Aviation to ensure its readiness for the future. The Task Force was charged to review all aspects of Army Aviation, with an initial focus on leadership, readiness, training, maintenance and sustainment, policy, and resources. As the Task Force Director, I recently briefed General Milley on the Task Force's recommendations to improve aviation readiness across the Total Force. On behalf of our Secretary, the Honorable Eric Fanning, and General Milley, I look forward to discussing Army Aviation readiness with you.

#### **Organization/Facilities**

Army Aviation plays an increasingly important role in support of the Army's missions and activities. Across the force on any given day, Army Aviation organizations, airframes, and personnel are simultaneously engaging in combat operations, training with other Army forces or international partners, and supporting civil authorities in the homeland. Indeed, it is hard to find any major Army activity that does not require Aviation. Army Aviation faces a number of challenges in meeting this high demand and fulfilling its missions.

The Total Army Force consisting of the Regular Army, the Army National Guard (ARNG), and the Army Reserve (USAR) maintains approximately 5,000 total aircraft in its inventory, including both fixed- and rotary-wing. About 3,750 of these aircraft are in Modified Table of Organization and Equipment (MTOE) units—tactical units that can be deployed around the world to carry out Army operations from combat to disaster response to forward presence in important regions of the world. Currently 30% of the Aviation Force is committed globally; 30 Active Component (AC) battalions and 5 Reserve Component (RC) battalions are deployed of 116 total battalions (55 AC / 61 RC). Since 2003, active component and many reserve component aviation units have deployed at or near frequency limitations set by Department leadership. The remaining fixed- and rotary-wing aircraft are in Table of Distribution and Allowances units—Army

organizations that do not deploy, such as the Army's Aviation training center at Fort Rucker, Alabama, or elements of Army Aviation that support the Total Force.

Currently, the Army operates aircraft at 164 locations around the world. Most locations require facilities to support flight operations, training and maintenance. Aviation maintenance facilities are essential to provide a climate controlled, weather-protected environment to conduct maintenance twenty-four hours a day, seven days a week in order to build combat power essential for training and operations. The quality of these facilities varies from installation to installation and each has a direct impact on unit readiness. Outdated facilities and hangars do not enable optimal or efficient maintenance operations resulting in longer repair times and fewer aircraft available for training. Although units with aging facilities are less efficient, our commanders take every precaution to ensure safe maintenance practices. In the current fiscal environment, the Army has assumed risk in modernizing our infrastructure to build the readiness required to meet global commitments. This is also true with the quality of our ranges and training areas. Continued risk in the out years would increase infrastructure deficiencies, which would negatively and significantly impact the overall readiness of our organizations.

#### **Flying Hour Program Resourcing**

A 20 percent reduction to the Army Aviation Home Station Flying Hour Program since the start of OEF/OIF has resulted in resourcing at approximately 11.5 hours/crew/month for the Regular Army. Although adequate for the current fight, given the complexity of aviation maneuver in Unified Land Operations at platoon, company and battalion level, 14.5 hours/crew/month of live flight time and the time to execute the training are required to achieve and maintain foundational flight skills at each echelon to support the collective maneuver proficiency required to effectively operate in a higher threat environment. The additional flight hours would also allow junior leaders to develop the foundational flight skills required to lead their formations and our future force. In essence, in the current training environment, we expect battalion level proficiency for our Combat Aviation Brigades, but in the best case are only able to

resource them to company level proficiency and, based on global requirements, we are often only able to allot the training time for them to reach platoon level proficiency.

We are already starting to see the impacts: Aviation Captains Career Course Officers with low flight hour totals who have not attained Pilot in Command; less experienced Warrant Officers in graduate courses (Instructor Pilot and Maintenance Test Pilot Courses) who require additional training; and Non-Commissioned Officers (NCOs) at Professional Military Education who do not have the foundational technical and leader skills required of their grade. Additionally, recent U.S. Army Aviation Center of Excellence Directorate of Evaluation and Standardization inspections and Combat Training Center Observer/Controller observations validate the lower proficiency (platoon or less) across the aviation force. This level of readiness is sufficient for counterinsurgency-based missions, but is not sufficient to build and maintain battalion level collective readiness required to meet the challenges of emerging and future threats.

If we do not correct these trends, our formations will not meet the demands of the future environment, and our leaders will not have the requisite experience to effectively lead their formations in combat. Realistic training, resourced with time and dollars, and Leader Development are the primary ways to reverse these trends and ensure the readiness of the current and future force.

### **Maintenance**

The inherently dangerous nature of flight operations and the complexity of modern aircraft systems require highly skilled professionals and standardized maintenance processes to ensure the airworthiness of Army aircraft. Poor maintenance practices can lead to, at best, a failed mission and, at worst, a catastrophe involving loss of life and destruction of equipment. For a variety of reasons, Army Aviation has not been able to meet equipment readiness goals. In spite of Fully Mission Capable (FMC) rates below Department of the Army goals over the last 15 years, Aviation units maintained mission capable rates that enabled units to meet the demands of training and combat operations in the current environment, but this mission capability will fall

short of the expected pace of operations in higher intensity conflict. We must, therefore, fully leverage trained and ready Soldiers to maintain our aircraft in order to meet current and future demand. However, in order to maximize combat capability to the Combatant Commander, aviation maintenance personnel have not been deploying with their aircrews, which requires reliance on contract maintenance in a deployed environment.

The greatest readiness effect of this practice is on our Soldiers' long-term ability to maintain aircraft. We are seeing an erosion in our Soldiers and NCOs ability to maintain combat power. For example, in FY15, the 101st Combat Aviation Brigade deployed to Afghanistan with just over 800 Soldiers of the brigade's authorized strength of more than 2,800 personnel. The limited number of the brigade's maintainers that deployed only performed minimal tasks required for launch and recovery of aircraft and did not conduct any scheduled or unscheduled maintenance. As a result, contractors provided all maintenance support throughout the deployment. This trend continues today with the current aviation brigade in theater.

When aircrews and aircraft deploy without organic Soldier-provided maintenance capabilities, maintenance Soldiers do not have an opportunity to gain experience or maintain proficiency in their Military Occupational Specialty. As the aircrews and aircraft return to home station, those Soldiers are no longer capable of maintaining their own aircraft without significant contractor augmentation, further degrading the ability of an Aviation unit to regain readiness. Many aviation brigade commanders state that deploying without organic maintenance capability greatly inhibits building and sustaining future readiness. It also impacts the unit's ability to deploy to an austere environment, which is critical to overall readiness.

Evidence of reduced maintenance proficiency is clear. Combat Aviation Brigades are not meeting readiness rates (not a parts issue or resource issue); they are struggling to maintain adequate combat power to meet training requirements and our NCOs who are attending Professional Military Education have significantly less knowledge and experience in maintenance management than we previously saw 2-3 years ago. This is causing increased operating costs due to a lack of troubleshooting

skills (failing to properly identify malfunctioning components and/or replacing functioning components) and is increasing the risk of maintaining fully airworthy aircraft.

### **Safety**

Army Aviation activities, even those in peacetime, are inherently dangerous. Although Aviation personnel are experienced and safety and maintenance standards are high, accidents do occur and are sometimes catastrophic. However, since the 1970s, the Army has demonstrated an overall reduction in major aviation accident rates. Major accidents involving injuries, loss of life, and significant aircraft damage dropped from an all-time high in the 1970s to a five-decade low in the 2010s thus far. However, after achieving an all-time low in FY13, Manned/Rotary Wing Class A through C accident rates (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) have increased in the last two years across all components. Additionally, Army Aviation experienced six Class A accidents during the first two quarters of FY16 that resulted in the destruction of six aircraft and loss of eight aircrew members. The investigations for those accidents are complete and the findings indicate that five of the six were a result of human error.

As in the civilian aviation sector, human error contributes to approximately 80 percent of all Army Aviation accidents and remains the leading causal factor in mishaps today. Class A human error accidents made up 77 percent of FY15's totals and 73 percent during FY14. For both Class A and B accidents, FY15's human error rate was 80 percent and 74 percent for FY14. Common themes during FY15 were overconfidence, complacency, inadequate mission planning, aircrew coordination errors and direct violations of mission approval criteria. Lack of power and degraded visual environments were also noted as contributing factors in a significant number of these accidents. While we will never completely eliminate human error accidents, they can be mitigated and reduced. The most effective means of reducing human error is aggressive and realistic training that increases repetition and grows confidence and competence in the individual and the collective team.

**Conclusion**

Army Aviation is an integral member of the joint combined arms team with a history of providing capability in a variety of ways across the full range of military operations. Throughout history, the Army modified policies and force structure to shape the force for the anticipated challenges it will face. As we focus on the future, the Army is taking steps to optimize the force and build readiness to meet any challenge. Your continued oversight and support is greatly appreciated. We can assure you that the Army's senior leaders are working to address current readiness challenges, as well as the needs of the Army now and in the future.

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.

**Lieutenant General Kevin W. Mangum**  
**Deputy Commanding General/Chief of Staff U.S. Army Training and Doctrine**  
**Command Fort Eustis, Virginia**

Lieutenant General (LTG) Kevin W. Mangum graduated from the United States Military Academy at West Point, NY in May 1982 where he was commissioned as a Second Lieutenant of Armor. Highlights of LTG Mangum's career include tours with 8th Army, the 101st Airborne Division (Air Assault), 2nd Infantry Division and 10th Mountain Division and two Joint tours. He has commanded at every level from platoon to Commanding General, United States Army Aviation Center of Excellence and Fort Rucker, Alabama.

After his initial tour in the 128th Aviation Company (Assault Helicopter) at Camp Page, Korea, he was selected for assignment with Task Force 160. He has since served four tours with the 160th Special Operations Aviation Regiment with duties ranging from section leader, battalion S-3 to command at company, battalion, and regiment levels. LTG Mangum also commanded A Company, 4th Battalion, 101st Aviation Regiment and 2nd Aviation Battalion, 2nd Aviation Regiment at Camp Stanley, Korea.

LTG Mangum's joint service includes tours at the Joint Electronic Warfare Center, Kelly Air Force Base, Texas and Joint Special Operations Command at Fort Bragg. In May 2008, he was assigned to his first post as a general officer, serving as the senior commander of Fort Drum and division rear commander of the 10th Mountain Division. He served as Deputy Commanding General of 1st Armor Division and United States Division-Center, Operation Iraqi Freedom, Iraq. LTG Mangum commanded the U.S. Army Special Operations Aviation Command upon its provisional activation on March 25, 2011. LTG Mangum commanded the United States Army Aviation Center of Excellence and Fort Rucker, Alabama prior to assuming duties as the Deputy Commanding General/Chief of Staff, U.S. Army Training and Doctrine Command on 28 March, 2014.

His numerous deployments include duty in the Republic of Korea, Honduras, Persian Gulf, Turkey, Bosnia, Afghanistan and Iraq. LTG Mangum also served as a U.S. Army War College Fellow at the Fletcher School of Law and Diplomacy, Tufts University. He holds a Masters of Business Administration from Webster University. His military awards and decorations include the Distinguished Service Medal, Defense Superior Service Medal, Legion of Merit, Distinguished Flying Cross, Combat Action Badge, Parachutist Badge, Air Assault Badge and the Master Army Aviator Badge.

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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: MAJOR GENERAL SCOTT WEST  
DIRECTOR OF CURRENT OPERATIONS,  
DEPUTY CHIEF OF STAFF FOR OPERATIONS  
HEADQUARTERS, U.S. AIR FORCE

JULY 6, 2016

NOT FOR PUBLICATION UNTIL RELEASED  
BY THE COMMITTEE ON ARMED SERVICES  
UNITED STATES HOUSE OF REPRESENTATIVES

Today's national security challenges come from a combination of strong states that are challenging world order, weak states that cannot preserve order, and poorly governed spaces that provide sanctuary to extremists who seek to destabilize the globe. The world needs a strong American Joint Force, and since our establishment in 1947, the Air Force remains an agile responder in times of crisis, contingency and conflict. The Joint Force depends upon Air Force capabilities and requires Airpower at the beginning, middle and end of every Joint operation.

America's Air Force must be able to disrupt, degrade or destroy any target in the world, quickly and precisely, with conventional or nuclear weapons, to deter and win our Nation's wars. Undoubtedly, decisive air, space and cyberspace power—and the ability to command and control these forces—have become the oxygen the Joint Force breathes and are fundamental to American security and Joint operations. Whether in support of global counter-terror operations or near-peer deterrence, your Air Force remains constantly committed, as we have for the past 25 years.

However, 25 years of continuous combat operations and reductions to our Total Force, coupled with budget instability and lower-than-planned funding levels, have contributed to one of the smallest, oldest and least ready forces across the full-spectrum of operations in our history. The Budget Control Act (BCA) further degraded our readiness. There is simply no way to recover without time, funding and people. While the Bipartisan Budget Act of 2015 provides some space to recover readiness and continue modernization efforts, your Air Force needs permanent relief from the BCA, consistent, flexible funding, increased manpower, and time to recover readiness.

#### **What does your Air Force need to be ready to do?**

The Air Force must be ready to conduct full spectrum operations. That includes the continued conduct of nuclear deterrence operations, continued support of counter terror operations (CT), and readiness for potential conflict with a near-peer competitor. Nuclear deterrence operations remain our top priority. With Congressional support, we will continue to modernize our nuclear force structure to sustain our deterrent capability well into the future. Regarding our support of CT operations, the Air Force has deployed Airmen throughout the Middle East and other regions for 25 years. I was the beneficiary in

Afghanistan. I recently returned from a one-year posting in Kabul where I coordinated air operations in support of counter-terrorism and train, advise and assist tasks with the Afghan military. Your deployed Airmen were trained, equipped, motivated and ready to work. Soldiers, sailors and Marines counted on us to do our jobs. We delivered. However, we must also be ready to conduct operations against a near-peer competitor.

Today, nation-states challenge America's freedom of maneuver in air, space and cyberspace, and near the borders of our Allies. As examples, China has increased its military capabilities and is expanding its influence in the Pacific. Its military actions are contrary to efforts to maintain stability, and they increase the risk of miscalculation and conflict in a region where instability could cause a significant negative impact on the global economy. Russian military actions are front and center with our NATO Allies who keep a wary eye to the east. Iran possesses significant military capacity and supports activities that are contrary to our interests and those of our partners in the region. An unpredictable North Korea continues to conduct nuclear and ballistic missiles tests in the face of international condemnation.

Accordingly, while we continue deterrence assurance operations and support of CT operations, we have to be prepared for conflict in the contested end of the spectrum. Combined with our joint partners, our readiness assures Allies and helps to deter aggressive military actions that would degrade stability in many regions of the world. Our service partners expect us to be prepared for all contingencies.

To do so, a minimum of 80% of the Air Force needs to be ready. Today, less than 50% of the Air Force is ready to conduct the full spectrum of combat tasks. While we are able to conduct nuclear deterrence operations and support CT operations, operations against a near-peer competitor would require a significant amount of training. The associated delay would pose a significant risk to mission. Conversely, deploying Airman to fight alongside soldiers, sailors and Marines, in their current readiness state, would significantly increase the risk to the success of the joint force.

In sum, our readiness is imbalanced at a time when the Air Force is small, old and heavily tasked.

**What needs to be done?**

We need to address readiness shortfalls in five areas: critical personnel skills, weapons systems sustainment, training resources, flying hours and operations tempo. All five must be addressed in a synchronized and balanced manner. First, we must address personnel shortfalls in critical skills. Human capital takes the longest to develop. We also need to stabilize weapons system sustainment funding and improve our training infrastructure. Finally, we need to increase our training flying hours and reduce operations tempo to provide the training our Airman deserve to be ready for full-spectrum operations. Each area is briefly described below.

**Critical Skills Availability:**

The immediate readiness priority is end strength. Since 2010, the Air Force separated nearly 20,000 highly skilled Airmen. Simultaneously, we expanded space, cyber and remotely piloted aircraft mission sets to support full spectrum capabilities, including the global war on terrorism, while reinforcing our nuclear deterrence enterprise. Today, the Air Force is short 4,000 active duty aircraft maintainers, and the problem will grow worse every month unless we increase maintenance manpower. Although we have shortfalls in other skill sets, the current maintenance shortfall has the greatest impact on readiness. Due to budgetary constraints and manpower reductions, the Air Force maintenance manning level is at its lowest point in over 20 years. Between 2004 and 2015, active duty maintenance manpower decreased by 21% while the fleet was reduced by 11%. As maintenance manning decreased, so did mission capable rates of our aging fleets. The lack of maintainers has significant impact on readiness and our ability to train. It is also the shortfall that takes the longest to recoup which is why critical personnel skill development is our top readiness priority.

**Weapon Systems Sustainment:**

Weapons systems sustainment underpins our ability to conduct deterrence operations, support the global war on terrorism and train for high end conflict. It covers the support we need to maintain, supply and sustain our fleets. It involves long lead times to synchronize government and industry actions that underpin our operations. Sustainment programs have been adversely impacted by sequestration-related funding constraints and unpredictable annual budgets. Funding caps and volatility adversely impact our ability to coordinate both near and long-term sustainment actions. Accordingly, we prioritize efforts on forward-deployed units and current operations. The shortfalls are felt most at home station, which curtails the capacity of our Airmen to prepare for full spectrum combat tasks between deployments. The shortfall is exacerbated by the increased costs to maintain and sustain older fleets. Since the average age of our Air Force fleet is 27 years old, most of our aircraft require extensive maintenance. Challenges to maintain adequate supplies is growing. Both factors increase the amount of time an aircraft is in maintenance and reduce the amount of time an aircraft is available for training. Accordingly, sufficient and stable weapons system sustainment funding is paramount. Permanent relief from Budget Control Act with predictable funding is necessary to rebuild a stable, weapons system sustainment capacity—a crucial underpinning of Air Force combat readiness.

#### Training Resources:

Training resources include ranges, target replicators, training munitions, threat emitters and support facilities. This readiness area includes the infrastructure needed to train at home station and in large-scale, joint and combined exercises like Red Flag or Green Flags. It supports the curriculum of our Weapons School which integrates air, space and cyber training at the high end of potential conflict. It also includes simulators and the ability to conduct virtual and live training simultaneously, with our Joint partners. Most importantly, it includes the ability to conduct live and virtual training for command and control.

We need to continue to upgrade our threat system replicators and increase capacity to conduct distributed training in units that are forward-deployed or in the United States. This includes virtual replications of environmental conditions on the ground with which we can train with soldiers, sailors and Marines.

#### Flying Hours:

Consistent, sufficient funding for flying training underpins readiness. However, since 2008, the Air Force has lacked the capacity to fly its minimum training requirement. The flying hour program has been capped to levels that are 10% less than the minimum requirement to sustain our current readiness level. Much more is required to rebuild readiness. However, before we increase flying hours, we must invest in maintenance manning, weapons systems sustainment and training resources. Without a balanced increase in all three, Airmen will not be able to fly additional hours. More maintainers and increased logistics support are needed to generate the sorties. Further, without improvements to our infrastructure, our training intensity and relevancy will be insufficient, which is the opposite of what our Airmen need to prepare for a full spectrum, joint combat.

#### Operational Tempo:

Finally, our operations tempo must be balanced between the demands of combat deployments and overseas engagements, versus the capacity for Airmen to train for full spectrum scenarios. Our forward-deployed forces are arguably the best in our history at counter-terrorism and train, advise and assist missions. However, due to our high operations tempo, there is insufficient time at home station to fully prepare full-spectrum readiness. Compounded by reductions in critical personnel, sustainment challenges, infrastructure investment, and flying hours, the high operations tempo is also a limiting factor in our ability to improve readiness.

#### **How long will a readiness recovery take?**

Eight to ten years once all the reductions are addressed. Critical personnel shortages are the primary driver. It takes five to seven years to transform a high school

graduate into a 5<sup>th</sup> generation aircraft mechanic, or a college graduate into a fighter pilot with the experience to positively affect a unit's readiness.

Given current caps on end strength and the Air Force's training capacity, it will take until FY21 through FY23 until all the Airmen that are needed to fix today's personnel readiness challenges are assessed into the service. By then, new recruits will begin to positively affect our personnel readiness reductions.

**What can Congress do?**

Repeal the BCA. Our readiness recovery is only possible if it is repealed. Support our end-strength increase request. Continue to support near readiness and long term modernization efforts of the Air Force. Provide consistent, stable funding for necessary improvements to both to be realized.

**Major General Scott D. West , USAF**

Major General Scott D. West is the the Director of Current Operations, Deputy Chief of Staff for Operations, Headquarters U.S. Air Force, Washington, D.C. The directorate, encompassing five divisions, the Air Force Operations Group and the Air Force Agency for Modeling and Simulation, is responsible for policy, guidance, and oversight of Air Force current operations in air, space and cyberspace. The Directorate provides time-sensitive situational awareness and analysis to Air Force senior leaders and links worldwide operations with core Air Force processes to enable global vigilance, reach and power.

Gen. West entered the Air Force in 1982 after graduating from The Citadel. He has served as an instructor pilot in the F-16 and flown combat missions in Operation Southern Watch. General West has commanded the 36th Fighter Squadron, 8th Operations Group, 27th Fighter Wing, 613th Air and Space Operations Center, the Air Force Operational Test and Evaluation Center, 9th Air and Space Expeditionary Task Force-Afghanistan and NATO Air Command-Afghanistan. He has completed staff assignments on the Joint Staff, Air Force Secretariat, Pacific Air Forces and NATO's Joint Warfare Centre.

**EDUCATION**

1982 Bachelor of Science in Civil Engineering, The Citadel, Charleston, S.C.  
 1985 Master's in Business Administration, Barry University, Miami, Fla.  
 1991 USAF Fighter Weapons School, Nellis AFB, Nev.  
 1994 Squadron Officer School, by correspondence  
 1997 Air Command and Staff College, Maxwell AFB, Ala.  
 1998 Master's in Airpower Arts and Sciences, School of Advanced Airpower Studies, Maxwell AFB, Ala.  
 2002 Master's in National Resource Strategy, Industrial College of the Armed Forces, Fort McNair, Washington, D.C.  
 2007 Senior Executive Fellow's program, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.  
 2011 Combined Force Maritime Component Commander course, Pacific Fleet Headquarters, Hawaii  
 2014 Joint Force Air Component Commander course, Maxwell AFB, Ala.  
 2015 Joint Force Land Component Commander course, Carlisle Barracks, Penn.

**ASSIGNMENTS**

June 1982 – June 1984, Design Engineer, 31st Civil Engineer Squadron, Homestead AFB, Fla.  
 July 1984 – December 1985, student, Undergraduate Pilot Training, Columbus AFB, MS, and Lead-in Fighter Training, Holloman AFB, N.M.  
 January 1986 – June 1986, F-16 student pilot, 311th Tactical Fighter Training Squadron, Luke AFB, Ariz.  
 July 1986 – June 1989, F-16 Instructor Pilot and Chief of Training, 429th Tactical Fighter Squadron, Nellis AFB, Nev.  
 July 1989 – December 1991, F-16 Instructor Pilot and Chief of Weapons, 72nd Tactical Fighter Training Squadron, MacDill AFB, Fla.  
 January 1992 – June 1994, F-16 Instructor Pilot and Flight Commander, USAF Fighter Weapons School, and F-16 Flight Examiner, 57th Operations Group, Nellis AFB, Nev.  
 July 1994 – July 1996, staff officer, Weapons Division, Office of the Secretary of the Air Force (International Affairs), the Pentagon, Washington, D.C.  
 August 1996 – July 1998, student, Air Command and Staff College and School of Advanced Airpower Studies, Maxwell AFB, Ala.  
 August 1998 – September 1999, Assistant Operations Officer, 68th Fighter Squadron, and

Operations Officer, 69th Fighter Squadron, Moody AFB, Ga.  
 October 1999 – July 2001, Commander, 36th Fighter Squadron, Osan Air Base, South Korea  
 August 2001 – June 2002, student, Industrial College of the Armed Forces, Fort McNair, Washington, D.C.  
 July 2002 – December 2002, Commander, 8th Operations Group, Kunsan AB, South Korea  
 January 2003 – December 2004, Chief of Forces Division, Force Structure, Resources and Assessment Directorate (J8), Joint Staff, the Pentagon, Washington, D.C.  
 January 2005 – February 2006, Vice Commander, 52nd Fighter Wing, Spangdahlem AB, Germany  
 March 2006 – September 2007, Commander, 27th Fighter Wing, Cannon AFB, N.M.  
 October 2007 – August 2008, Commander, 613th Air and Space Operations Center, Hickam AFB, Hawaii  
 September 2008 – August 2010, Deputy Commander and Chief of Staff, Joint Warfare Centre, Supreme Allied Command for Transformation, NATO, Stavanger, Norway  
 August 2010 – August 2011, Vice Commander, 13th Air Force, Joint Base Pearl Harbor-Hickam, Hawaii  
 August 2011 – September 2012, Deputy Director of Operations, Plans, Programs and Requirements, Headquarters Pacific Air Forces, Joint Base Pearl Harbor-Hickam, Hawaii  
 September 2012 – April 2015, Commander, Air Force Operational Test and Evaluation Center, Kirtland AFB, N.M.  
 April 2015 – April 2016, Commander, 9th Air and Space Expeditionary Task Force-Afghanistan; Commander, NATO Air Command-Afghanistan; Director, AFCENT's Air Component Coordination Element for U.S. Forces-Afghanistan & NATO's Operation Resolute Support; and Deputy Commander-Air for U.S. Forces-Afghanistan.  
 May 2016 – present, Director of Current Operations, Deputy Chief of Staff for Operations, Headquarters U.S. Air Force, the Pentagon, Washington, D.C.

#### **SUMMARY OF JOINT ASSIGNMENTS**

January 2003 – December 2004, Chief of Forces Division, Force Structure, Resources and Assessment Directorate (J8), Joint Staff, the Pentagon, Washington, D.C., as a colonel  
 September 2008 – August 2010, Deputy Commander and Chief of Staff, Joint Warfare Centre, Supreme Allied Command for Transformation, NATO, Stavanger, Norway, as a brigadier general  
 April 2015 – April 2016, Commander, NATO Air Command-Afghanistan; Director, AFCENT's Air Component Coordination Element for U.S. Forces-Afghanistan & NATO's Operation Resolute Support, as a major general

#### **FLIGHT INFORMATION**

Rating: Command pilot  
 Flight hours: More than 2,500  
 Aircraft flown: A-10 and F-16

#### **MAJOR AWARDS AND DECORATIONS**

Distinguished Service Medal with oak leaf cluster  
 Defense Superior Service Medal  
 Legion of Merit  
 Meritorious Service Medal with three oak leaf clusters  
 Air Medal  
 Air Force Commendation Medal with oak leaf cluster  
 Air Force Achievement Medal  
 Joint Meritorious Unit Award with two oak leaf clusters  
 Air Force Outstanding Unit Award with three oak leaf clusters  
 Air Force Organizational Excellence Award  
 Combat Readiness Medal with four oak leaf clusters  
 National Defense Service Medal with bronze star  
 Armed Forces Expeditionary Medal  
 Southwest Asia Service Medal with bronze star  
 Global War on Terrorism Service Medal

Korea Defense Service Medal

**EFFECTIVE DATES OF PROMOTION**

Second Lieutenant June 2, 1982

First Lieutenant June 2, 1984

Captain June 2, 1986

Major July 1, 1994

Lieutenant Colonel Sept. 1, 1998

Colonel Aug. 1, 2002

Brigadier General Nov. 21, 2008

Major General June 8, 2012

(Current as of April 2016)

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

**STATEMENT OF**

**REAR ADMIRAL MICHAEL C. MANAZIR**

**DEPUTY CHIEF OF NAVAL OPERATIONS FOR WARFARE SYSTEMS (N9)**

**ON**

**AVIATION READINESS**

**BEFORE THE**

**HOUSE ARMED SERVICES COMMITTEE**

**SUBCOMMITTEE ON**

**READINESS**

**JULY 6, 2016**

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

Chairman Wittman, 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 Navy aviation readiness and the challenges we face in achieving Fleet readiness today and in the future.

Internationally, the 21<sup>st</sup> century has seen a proliferation of diverse threats to our national security. For the first time in twenty-five years, the Navy is facing a return to great power competition at sea. Russia and China have a growing arsenal of high-end warfighting capabilities, engage in coercion and competition and have global reach. Provocation from Iran and North Korea continue to create instability in the Middle East and the Western Pacific. Terrorist organizations such as ISIS remain a significant threat to U.S. interests, our allies and the homeland. Domestically, we are operating in a resource-constrained environment, under an uncertain and unpredictable budget process.

In these conditions, all of us share a duty to make our Fleet, and the Sailors who serve, ready to fight and win, both today and in the future. Powered by the exceptional Sailors and Civilian Professionals I am proud to represent here today, your Navy is the world's finest, and we are committed to retaining our margin of advantage over our adversaries, but that margin could be lost if we do not achieve stable budgets and make deliberate investments in future readiness. We will only maintain our status as the world's greatest Navy if we are vigilant around the globe and dedicated to restoring our future readiness and capability. My testimony today will focus on the current readiness of your Navy aviation force, as well as some of the key challenges we face in delivering future readiness.

#### **Current Maritime Operations**

The demand for naval assets by Geographic Combatant Commanders (GCCs) remains high, and Navy continues to provide the maximum sustainable global presence it can generate to support a diverse array of GCC missions. Today, we have four aircraft carriers forward deployed – *John C Stennis* and *Ronald Reagan* in the Pacific, and *Dwight D Eisenhower* and *Harry S Truman* in the Mediterranean and Middle East. This is the first year since 2009 that Navy has been able to provide a CSG to U.S. Pacific Command while the forward-deployed CSG was in maintenance. Further, our operations in the Mediterranean reflect our commitment to counter extremism in the Middle East while reassuring our alliance with the European Union

of states. Over the past twelve months, three CSGs conducted strike missions against ISIS in support of Operation INHERENT RESOLVE. Four Amphibious Readiness Groups (ARGs), with embarked Marine Expeditionary Units (MEUs), supported a wide range of missions including maritime security operations, strike missions against ISIS, and maritime interdiction support off the coast of Yemen as part of Operation RESTORE HOPE. Across the globe, the Navy supported other critical GCC missions such as theater security cooperation, counter-piracy, counter-drug, ballistic missile defense, freedom of navigation, strategic deterrence patrols, and Intelligence, Surveillance, and Reconnaissance missions. These missions not only demonstrate our responsiveness and warfighting prowess, but also maintain our Sailor proficiency, a key aspect of readiness bought only with time at sea.

The Optimized Fleet Response Plan (OFRP), in conjunction with ongoing Fleet material condition reset efforts, is designed to support Navy's overall readiness recovery goals and maximize the employability of our operational units for both presence and contingency response. To date, three CSGs and four ARGs have been inducted into OFRP. The *Eisenhower* CSG was the first to deploy under the OFRP construct. Fleet implementation of OFRP for CSGs is scheduled to be complete in Fiscal Year (FY) 2021 with the deployment of the *Gerald R Ford* CSG. While it is difficult to pinpoint an exact readiness recovery timeframe for each of our force elements given the array of factors involved, we predict CSG readiness recovery will occur at the end of the FY 2017 Future Year Defense Program (FYDP). ARG recovery will remain constrained until we complete modernization of our large deck amphibious ships to include the capability to operate the F-35B. Key to our success is operating the battle force at a sustainable level over the long term. Readiness recovery requires a commitment to protect the time needed to properly maintain and modernize our capital-intensive force and to conduct full-spectrum training. Achieving full readiness also requires us to restore capacity and throughput at our public shipyards and aviation depots, primarily through hiring and workforce development, and successful efforts in meeting hiring goals have been largely achieved.

OFRP has to do three things for the Fleet to be ready to fight and win: (1) it has to ready Fleet units for routine deployments, (2) it has to surge much of the Fleet in times of war or significant crisis and then reset it in stride after that crisis, (3) it has to maintain and modernize Fleet units so they are viable until the end of their planned service lives. And it has to do all three of these things within the resources that the nation provides. After more than a decade of

high operational tempo, sequestration, and workforce challenges, we are aggressively addressing the resultant maintenance and modernization backlog through this evolutionary process.

**Future Readiness Challenge**

As you have heard in recent testimony from the former Vice Chief of Naval Operations, Admiral Michelle Howard, the Navy maintenance budget requests are built upon independently certified models, reflecting engineered maintenance plans for each ship class and aviation type/model/series. Furthermore, recent testimony from Fleet Commanders reaffirmed that our shipyards and aviation depots have been challenged by emergent work beyond that expected amidst a decade of high tempo operations which has caused additional wear on our hardware.

Resetting our surface ships and aircraft carriers after more than a decade of war led to significant growth in public and private shipyard workload. The Navy baseline budget request funds 70% of the ship maintenance requirement across the force, addressing both depot and intermediate level maintenance for aircraft carriers, submarines and surface ships. Overseas Contingency Operations (OCO) funding provides the remaining 30% of the baseline requirement and allows for the continued reduction of surface ship life-cycle maintenance backlogs. Of note, the Navy traditionally funds 80% of the ship maintenance requirement in the base budget and the remaining 20% in OCO. But, for the second year, the additional OCO request to support Navy's maintenance reset (\$625M) includes funding for aircraft carriers in addition to other specific surface Fleet assets, to address increased wear and tear outside of the propulsion plant. Since much of this reset work can only be accomplished in a drydock, the maintenance schedule needs to be closely managed, as reset is expected to continue across the FYDP.

The Fleet Readiness Centers (FRCs) and Navy's aviation depots have been challenged to recover full productivity after hiring freezes, furloughs, and previous restrictions on overtime. The workforce behind our public and private depots is no longer sufficient for emergent projects and is in the midst of rebuilding and training new workers. Through a concerted hiring effort with the support of congressional budgetary increases, the recovery in maintenance capacity is in progress. However, the FRCs face a significant backlog of work, particularly for the service life extension of our legacy F/A-18 Hornets. FRC hiring continues to improve the end-strength of the depot-level workforce to ultimately meet the workload demand. In an effort to improve throughput, FRCs are increasing engineering expertise to address the work required to reach as

high as 10,000 hours of service life on select F/A-18A-D aircraft, reallocating some of the existing workforce, and contracting additional private sector support. Navy has increased the number of in-Service Repair (ISR) field teams deployed to tactical aircraft bases to improve flight line readiness posture and ensure there is a clear understanding of the material condition of airframes heading to the depots.

The Aircraft Depot Maintenance program is funded to 76% in baseline and increased to 85% funding level using OCO funds for work planned for FY 2017. This funding level reflects the estimated executable funding level given the aviation depot capacity projections. The President's Budget request of \$1.1B supports repairs for 583 airframes and 1,684 engines/engine modules in FY 2017, constrained by aviation depot capacity. Currently, approximately 50% of our F/A-18A-D aircraft inventory is out of reporting due to needed depot level maintenance. This is an improvement from FY 2015. The Department has seen a 44% improvement in FY 2015 F/A-18A-D depot production due to process improvements implemented in 2014. Depots are currently funded to capacity in FY 2016, and the 2017 baseline budget funding levels anticipate continued improvement across the FYDP to reach annual production requirements in FY 2019.

Following midyear analysis of overall Navy FY 2016 funding execution and requirements, the Navy identified unfunded readiness requirements totaling \$848M, 2% of the enacted readiness accounts (\$46B). Root causes for the shortfall include FY 2016 Bipartisan Budget Act fiscal pressure resulting in a \$400M reduction in readiness buying power; unbudgeted cost growth in the resetting of ships following sustained wartime operational tempo and in funding cyber programs to address an evolving threat; plus extending the deployment of the *Truman* CSG.

The Navy will closely manage the shortfall throughout the remainder of FY 2016, be prepared to execute additional funds should they become available, and be prepared to remain within enacted funding levels as necessary. The \$848M shortfall will have no impact to our forces currently deployed, but deferring depot and continuous ship maintenance availabilities would likely delay a number of deployments in the coming years.

**Today's Readiness Challenge**

Navy aviation readiness is in a precarious position today as we continue to meet deployed readiness requirements, albeit at the expense of non-deployed force training. Navy aviation uniquely operates under a phase-based, tiered-readiness generation model. This Fleet Readiness Training Plan (FRTTP) achieves readiness at the right level, at the right time to meet Global Force Management demand. More specifically, the number of aircraft and aircrew proficiency required increases during a unit's work up cycle, culminating in peak combat readiness in preparation for deployment. This tiered readiness generation model affords us the opportunity to tailor the readiness structure to account for maintenance and material challenges. Essentially, this is how Navy aviation continues to meet requirements while managing strike fighter inventory.

As we reset in stride, we continue to face challenges associated with increased costs and effort in sustaining legacy aircraft – rotary, fixed wing, and trainers. Our legacy fleet of aircraft is being demanded more than anticipated and retained longer than planned, while some of their intended replacements have not yet arrived. Furthermore, fiscal constraints force difficult trades in capacity and readiness for capability improvements. Simply, the Navy is challenged to modernize our fleet while also sustaining an aging force. Accordingly, with the FY 2017 President's Budget request Navy aviation has harmonized readiness enablers to achieve readiness objectives while concurrently supporting modernization. In this process, the Department has reduced baseline funding in the flight hour program, which is currently limited by aircraft availability, and moved those funds across other aviation readiness accounts. This readiness harmonization effort invests in material condition improvement to provide more aircraft to the Fleet. This, in turn, will enable force generation earlier in the FRTTP cycle and improve the overall force readiness posture and surge capacity.

**Conclusion**

We are still paying down the readiness debt we accrued over the last decade of combat operations, and those effects have been compounded by the cumulative effect of budget reductions and four consecutive years of continuing resolutions and sequestration. The Navy continues readiness recovery through the implementation of OFRP, but continued shortfalls in ship and shore facilities sustainment coupled with aging aircraft inventory will eventually have

negative effects on our long-term readiness. Failing to plan for these necessary investments will hinder our future recovery.

The Navy and Marine Corps aviation team is an agile maritime strike and amphibious power projection force in readiness. Such agility requires that the aviation arm of our naval strike and expeditionary forces remain strong. Today we face a readiness challenge in sustaining our legacy fleet while supporting modernization to pace future threats. Mr. Chairman, and distinguished committee members, I welcome your continued support as we overcome these challenges to build and sustain the preeminent force of the future. Thank you for your commitment to Naval Aviation. I look forward to your questions.

**Rear Admiral Michael C. Manazir**  
**Deputy Chief of Naval Operations for Warfare Systems (OPNAV N9)**

Rear Adm. Michael Manazir entered the U.S. Naval Academy from Mission Viejo, California, and graduated in 1981. He earned his Naval Aviation wings in April 1983 and deployed in the F-14A in July 1984.

Manazir commanded the Tomcatters of Fighter Squadron (VF) 31 from June 1997 – September 1998, USS Sacramento (AOE1) from January 2003 – July 04, USS Nimitz (CVN 68) from March 2007 – August 2009 and Carrier Strike Group (CSG) 8 embarked on USS Dwight D. Eisenhower (CVN 69) from September 11 – June 13.

Prior to squadron command, his afloat tours included service as a fighter pilot and landing signal officer aboard various aircraft carriers on the west coast. Following Navy Nuclear Power Training, Manazir served as the executive officer of the USS Carl Vinson (CVN 70) from July 2001 – December 2002. In 2007, Manazir was recognized as the Tailhooker of the Year by the Tailhook Association.

Ashore, Manazir served as an action officer in the Office of the Secretary of Defense, on the chief of naval operations staff as F-14 requirements officer and for the commander, Naval Air Forces as the assistant chief of staff for readiness.

As a flag officer, Manazir served as director, strike aircraft, weapons and carrier programs on the chief of naval operations staff (N880) from August 2009 to September 2011 and on the chief of naval operations staff as the director, Air Warfare, Office of the Chief of Naval Operations (OPNAV N98) from Jul 2013 to May 2016.

Manazir qualified in the F-14A/D and F/A-18E/F aircraft and has flown more than 3750 hours and 1200 arrested landings during 15 deployments aboard aircraft carriers on both coasts.

Manazir currently serves as the deputy chief of naval operations for warfare systems (OPNAV N9) on the staff of the chief of naval operations. In this capacity, he is responsible for the integration of manpower, training, sustainment, modernization and procurement of the Navy's warfare systems.

Manazir is the recipient of various personal and campaign awards including the Legion of Merit (six), the Defense Meritorious Service Medal, the Meritorious Service Medal (two) and the Strike/Flight Air Medal (two).

Update: 18 May 2016

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**WITNESS RESPONSES TO QUESTIONS ASKED DURING  
THE HEARING**

JULY 6, 2016

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**RESPONSE TO QUESTION SUBMITTED BY MRS. HARTZLER**

General WEST. The Air Force is currently conducting a congressionally-mandated study to determine the appropriate B-21 fleet size. We expect to submit the results of this study to Congress in late 2016/early 2017. [See page 36.]



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**QUESTIONS SUBMITTED BY MEMBERS POST HEARING**

JULY 6, 2016

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#### **QUESTIONS SUBMITTED BY MS. TSONGAS**

Ms. TSONGAS. Rear Admiral Manazir, during the February 2nd, 2016 Tactical Airland Subcommittee hearing on Naval Aviation, you noted that you were focused on driving down the rate of physiological incidents experienced by F/A-18 pilots. Has that occurred? Has the rate of incidents decreased since we last spoke?

Admiral MANAZIR. The Department has not yet seen a decline in the rate of reported F/A-18 physiological incidents. We are continuing efforts to educate our aviators about the risks of physiological events, and encouraging them to report even minor events which will aid in more accurate tracking of the incident rate and diagnosing the problem.

Ms. TSONGAS. Rear Admiral Manazir, during the same February 2nd, 2016 Airland Subcommittee hearing, Rear Admiral Moran noted that addressing the physiological incident rate in the F-A/18 fleet was not a question of resources. Do you still feel like that is the case?

Admiral MANAZIR. The F/A-18 Physiological Episode Team does not have any efforts or mitigations that have not been pursued or that have been put on hold due to a lack of funding. All reasonable efforts to reduce Physiological incidents are being pursued and are currently funded.

Ms. TSONGAS. Rear Admiral Manazir, during the same February 2nd, 2016 Airland Subcommittee hearing, Rear Admiral Moran also indicated that the Navy was looking into extending the capacity of the backup oxygen system in order for pilots to have longer access to pure oxygen in the event of an emergency or if they felt the onset of a physiological event. Can you tell me where the Navy is in those efforts?

Admiral MANAZIR. The Navy is in the process of awarding a contract in the fourth quarter of Fiscal Year 2016 for the developmental engineering design to increase the NACES seat kit emergency oxygen capacity by adding an additional oxygen bottle to the seat pan. The Navy will field the solution immediately following successful development and testing of the system.

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#### **QUESTIONS SUBMITTED BY MR. PETERS**

Mr. PETERS. The Secure LVC Advanced Training Environment ATD will provide a technology framework for LVC integration into 4th and 5th generation aircraft for a 2022 Program of Record. This program is intended to help meet increasing demand for higher fidelity, contested environment combat training and maintain a critical technology and training advantage. Given the significant cost savings and higher fidelity training SLATE ATD will help deliver, please provide an estimate of additional program resources to achieve all identified program goals including physical cockpit integration and testing, encryption, and 4th and 5th generation interoperability.

General DAVIS. At this time, information regarding additional resource requirements has not been determined due to the immaturity of SLATE ATD. USAF-led efforts to test and field SLATE ATD will continue to be monitored with interest and no financial burden to the USMC. If the program matures over time and is determined to meet USMC LVC training capability requirements, then efforts to join the program may begin. In the meantime, the USMC will continue to research this and other LVC training options.

Mr. PETERS. The Secure LVC Advanced Training Environment ATD will provide a technology framework for LVC integration into 4th and 5th generation aircraft for a 2022 Program of Record. This program is intended to help meet increasing demand for higher fidelity, contested environment combat training and maintain a critical technology and training advantage. Given the significant cost savings and higher fidelity training SLATE ATD will help deliver, please provide an estimate of additional program resources to achieve all identified program goals including physical cockpit integration and testing, encryption, and 4th and 5th generation interoperability.

General MANGUM. The Secure Live, Virtual, Constructive (LVC) Advanced Training Environment (SLATE) Advanced Technology Demonstration (ATD) system is not

an Army program of record for our aviation assets nor, is it on any transition path for any Army training aids, devices, simulations or simulators.

Mr. PETERS. The Secure LVC Advanced Training Environment ATD will provide a technology framework for LVC integration into 4th and 5th generation aircraft for a 2022 Program of Record. This program is intended to help meet increasing demand for higher fidelity, contested environment combat training and maintain a critical technology and training advantage. Given the significant cost savings and higher fidelity training SLATE ATD will help deliver, please provide an estimate of additional program resources to achieve all identified program goals including physical cockpit integration and testing, encryption, and 4th and 5th generation interoperability.

General WEST. The SLATE program team has developed and coordinated a set of priorities, focus, and a revised timeline for an extension to the SLATE ATD to align with the availability of an F-35 aircraft for flight testing. The extension timeline would cost \$48M and would add 2.5 years to the schedule. In addition to testing SLATE components and models on the F-35, the extension expands the capabilities of the baseline demonstration with a larger number of sensor models, cyber vulnerability assessments of the SLATE infrastructure, and additional trades on range infrastructure, form factor processors, radios, MILS devices and 4th and 5th gen integration.

The Air Force considers it essential that the potential for a timely training capability remain the practical imperative of the SLATE ATD program.

Mr. PETERS. The Secure LVC Advanced Training Environment ATD will provide a technology framework for LVC integration into 4th and 5th generation aircraft for a 2022 Program of Record. This program is intended to help meet increasing demand for higher fidelity, contested environment combat training and maintain a critical technology and training advantage. Given the significant cost savings and higher fidelity training SLATE ATD will help deliver, please provide an estimate of additional program resources to achieve all identified program goals including physical cockpit integration and testing, encryption, and 4th and 5th generation interoperability.

Admiral MANAZIR. The Department of the Navy (DON) is collaborating with Department of the Air Force as a supplemental contributor to Air Force led Secure LVC Advanced Training Environment (SLATE) ATD efforts. DON hopes to gain a better understanding, through advanced or experimental waveforms, of how to improve data transfer capabilities driven by future aircraft training requirements. However, as a supplemental contributor DON defers specifics of SLATE ATD program goals and resourcing to the lead service.

