AIR DOMINANCE AND THE CRITICAL ROLE OF FIFTH GENERATION FIGHTER AIRCRAFT

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DOCUMENTS SUBMITTED FOR THE RECORD:

[There were no Documents submitted.]

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:

[There were no Questions submitted during the hearing.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING:

[There were no Questions submitted post hearing.]
AIR DOMINANCE AND THE CRITICAL ROLE OF FIFTH GENERATION FIGHTER AIRCRAFT

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES,
Washington, DC, Saturday, June 18, 2016.

The subcommittee met, pursuant to call, at 10:00 a.m., in the Carney Auditorium, National Museum of the U.S. Air Force, 1100 Spaatz Street, Dayton, Ohio, Hon. Michael R. Turner (chairman of the subcommittee) presiding.

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

Mr. TURNER. The hearing will come to order. Good morning. This subcommittee meets today to receive testimony on air dominance and the critical role of fifth generation fighters.

We welcome our distinguished witness today, Major General Jerry Harris, a Vice Commander of Air Combat Command [ACC], United States Air Force. General Harris, we thank you for your service, and we look forward to hearing from you and your important testimony today.

This hearing will be the first of two oversight hearings the subcommittee plans to hold on air dominance and the critical role of fifth generation fighters. Air dominance means that friendly aircraft can fly anywhere in enemy territory and can also be effective at performing their mission.

Today’s ground and naval forces count on our combat air forces to provide air dominance so that movements of troops, supplies, weapons, and ammunition can quickly be brought to bear in order to win decisively. Here at the National Museum of the United States Air Force, I can’t think of a more appropriate place for us to begin this series on air dominance.

Those of you who have toured the museum have noted aircraft such as the P–51, which was developed in World War II to defeat the threat posed by the German forces. The Korean War brought new challenges, such as the jet-powered MiG–15, which our Air Force answered with the F–86, eventually resulting in a 14-to-1 kill ratio over North Korean fighter aircraft. The Vietnam War saw the advent of radar-guided surface-to-air missiles, which resulted in the development of the F–105G Wild Weasel aircraft, designed to detect and destroy those missiles which were threatening our Nation’s capability to achieve and maintain air dominance.

After the Vietnam War, lessons learned and technical advances by both our Nation and near-peer adversaries required the intro-
duction of new fighter aircraft like the F–14, F–15, F–16 and F–18, which we call on today. We call these fourth generation fighter aircraft, characterized by improvements in maneuverability, radars, sensors, and weapons.

That fleet of aircraft overwhelmingly achieved air dominance in the first Gulf War, Operation Desert Storm. Although modified somewhat to keep pace with threats, our fighter aircraft inventory today is comprised largely of those fourth generation fighter aircraft we used in Operation Desert Storm. Like we have seen historically since World War II, our adversaries have not stood still in their efforts to counter American air dominance since Operation Desert Storm. Integrated air defense systems with more powerful radars and more accurate and longer-range missiles have been developed. Many of these systems are so mobile, they will be much more difficult to target. Our adversaries are also developing advanced fifth generation aircraft which include the Russian Sukhoi T–50 and China’s J–20 and J–31.

To maintain future air dominance, our Nation will require a fleet of fifth generation aircraft characterized by a much lower radar signature to negate our adversaries’ advances in radars and radar-guided missiles. Our fifth generation aircraft will also need to have machine-to-machine interfaces, giving pilots unprecedented situational awareness of where those mobile surface-to-air and air-to-air threats are in real time. Our air dominance force of the future will need to have the capability, capacity, and readiness to meet those future challenges and threats.

The Air Force’s current fleet of fifth generation fighter aircraft consists of the F–22 and the F–35 Joint Strike Fighter. This subcommittee has received briefings from the National Air and Space Intelligence Center, or NASIC, located here at the Wright-Patterson Air Force Base, on the threats we are currently facing, and I am convinced now more than ever that we must resource and invest in fifth generation fighter capability. The investments we make now must be based on capability and countering the threats facing our national security.

We only produced 187 fifth generation F–22 aircraft, but that number was 194 aircraft short of the requirement of 381 F–22s. Unfortunately, the decision to stop F–22 production was a strategy driven by budgeting goals rather than one driven by the need to obtain a required capability. That is why the House Armed Services Committee directed the Secretary of the Air Force to provide a report to the congressional defense committees on the costs associated with restarting the F–22 production line to procure those 194 additional F–22s.

Regarding the F–35 Joint Strike Fighter, the Marine Corps achieved initial operational capability [IOC] in the F–35 Joint Strike Fighter with 10 aircraft at Marine Corps Air Station Yuma, Arizona, last year. Between August and December of this year, the Air Force will achieve its initial operational capability with the F–35A at Hill Air Force Base in Utah. This is good news, and indicates that the F–35 Joint Strike Fighter is remaining on cost and schedule. However, we are currently not producing F–35s at the rate that we had planned even last year. That is why the House passed the National Defense Authorization Act [NDAA] for Fiscal
Year 2017 by adding 5 F–35As to meet last year’s Air Force F–35A budget plan for 48 aircraft in fiscal year 2017, an unfunded requirement identified by the Air Force Chief of Staff. The House bill also added additional F–35Bs and Cs for the Navy and Marine Corps, also unfunded requirements identified by the Navy and Marine Corps.

Our Nation has met the challenges for air dominance in the past, and I am confident we will do so now and in the future. But we must remain committed to providing the resources necessary to provide the capability, capacity, and readiness necessary to accomplish the critical mission of maintaining air dominance.

Before I begin, I would like to recognize each of the members of our panel today and then give them an opportunity to also provide an opening statement.

Dr. Wenstrup from the Cincinnati area serves on the Armed Services Committee and on the Intelligence Committee with me. I have Representative Chabot, who is also from the Cincinnati area and serves as the chair of the Small Business Committee. And we have Representative Stivers from Columbus, who also serves on the Financial Services Committee and the Rules Committee, which is the committee that determines all of the business that gets to the House floor.

I appreciate each of you participating, and it is great that we can, with what I would call the powerful Ohio delegation, constitute a full field hearing on this very important topic.

And with that, I would like to recognize Dr. Wenstrup.

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

STATEMENT OF HON. BRAD R. WENSTRUP, A REPRESENTATIVE FROM OHIO, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Dr. WENSTRUP. Well, thank you very much. I appreciate the opportunity to be here today, and I want to thank all those here at the museum and the Air Force for hosting us. But I think it is important that we discuss the maintenance of air dominance and the role that the fifth generation fighters are playing, especially in comparison to our traditional adversaries in the world. It is really a precondition for any military victory to be able to control the skies. Our ground forces rely on it. They expect it. It affects our ground maneuvers. I am an Army guy, so I am speaking from the ground. And also as an Army doctor, it affects our MEDEVAC [medical evacuation] operations, which is very important to our troops, obviously.

I think that we have enjoyed the dominance in the air, and we have to continue that, as well as dominance in air, land, sea, cyber, and space that are so important today.

But you know as we have seen over a decade of war or more, we have seen recession and budget constraints, and there are concerns over modernization, obviously, and maintenance and training for our troops, especially in the air. And it is important to note also what our adversaries are doing. So I hope that is part of our conversation today as best we can to talk about what we need to do to prioritize modernization and technology.
So I enjoy the opportunity to be here today with you, and I look forward to your testimony.

Mr. TURNER. Thank you.

Representative Chabot.

STATEMENT OF HON. STEVE CHABOT, A REPRESENTATIVE FROM OHIO, CHAIRMAN, COMMITTEE ON SMALL BUSINESS

Mr. CHABOT. Thank you, Mr. Chairman. And thank you for holding this subcommittee hearing today at Wright-Patterson Air Force Base in your district. I happen to represent Warren County now, and a lot of the folks from Warren County work here at Wright-Patterson Air Force Base, so we especially appreciate that, and thanks for the invitation to be here.

I would also like to especially thank Major General Harris and all those who have served our country or are currently serving our country in the military. We appreciate the sacrifices that all of you are making for us every day and the need to make sure that we provide our men and women on the front lines with the very best equipment that is available, while also implementing the right strategy to maintain our air dominance, and to a great degree that is what this hearing is about, is maintaining that air dominance.

I certainly look forward to hearing Major General Harris about the strategy to prepare our Air Force for the future to confront the numerous growing threats. I am especially pleased that we were able to hold this hearing at Wright-Patterson Air Force Base. This base is a vital asset to our military and comes with a great tradition and history. My dad, who was a World War II veteran, and my mom for many years got their health care here at Wright-Patterson Air Force Base. They would drive up here from Cincinnati, and it was outstanding care, and I certainly appreciate the care that they got here.

Our family used to come up here for the Dayton Air Show, which is, I believe, this weekend——

Mr. TURNER. It is.

Mr. CHABOT [continuing]. Or this week. So we would encourage folks who may see this hearing to come here to Wright-Patterson Air Force Base and enjoy that experience.

And of course, Wright-Pat, a lot of the name is the Wright brothers, who grew up right here in your hometown of Dayton, Ohio. I would like to highly recommend a book that I brought along with me, a little prop here today. This showed up on my desk about a month ago. We reformed the congressional gift laws, and there are bans on certain stuff you can get, but we can still get books. And I am kind of a cheapskate, so when I get one I virtually always read it, and this one was great. It is called "The Wright Brothers." It is by David McCullough. I strongly recommend it. That is the only ad I am going to give during the course of this hearing.

But again, Mr. Chairman, I appreciate you holding this hearing and yield back my time.

Mr. TURNER. Thank you. Thank you for acknowledging David McCullough's book. The Library of Congress actually had Dave McCullough in to do a presentation on his book, and I was very honored to have Stephen Wright of the Wright family present with me. But it was nice to hear him highlight Dayton's role in the
Wright brothers’ success, and it is not just a story being told in Dayton because he actually saw that Dayton itself, its infrastructure, was critical in the Wright brothers being able to achieve what they did. I thought that was certainly a great story.

In representing Steve Stivers, I also want to acknowledge that Dr. Wenstrup and Representative Stivers currently serve in our Armed Forces. So in addition to serving their country in Congress, they also serve in the Armed Forces, and we certainly thank you both for that.

STATEMENT OF HON. STEVE STIVERS, A REPRESENTATIVE FROM OHIO, COMMITTEE ON FINANCIAL SERVICES

Mr. STIVERS. Well, thank you, and thanks for allowing me to be here. I want to thank Chairman Turner for holding this hearing. You know, he is a true leader on the House Armed Services Committee, and especially anything involving airpower, he is the go-to guy. I am just excited to be here at Wright-Pat. I want to thank the folks from Wright-Patterson Air Force Base and the National Museum of the Air Force for hosting us today. As a 32-year member of the Army and currently a colonel in the Ohio Army National Guard, I appreciate what goes on above my head when I am wearing the uniform, and air superiority is important to everybody on the ground because if you control the air, it is easier to control the ground.

I am looking forward to General Harris’ testimony and answering our questions, especially with regard to the F–22, F–35, manning, and resources. So thank you for being here, General.

Again, I want to say thank you to Congressman Turner for putting this together and for his leadership in our military to make sure that our military is at the cutting edge and can defend our own national interests. So, thank you, Congressman Turner, for your leadership, and I yield back the balance of my time.

Mr. TURNER. Thank you.

General Harris, before I turn it over to you, I will tell you that you are speaking in front of a group that have been strong advocates for relieving sequestration that, of course, has been a scourge on our military, has made it very difficult for us to achieve our advance acquisition programs, and it certainly has had a huge impact here on Wright-Patterson Air Force Base, where when sequestration went into place over 12,000 people were furloughed. But you are speaking in front of a group that not only is sympathetic but has been actively working to set aside sequestration and its effects on your work.

General Harris, we look forward to your message. Thank you.

STATEMENT OF MAJ GEN JERRY D. HARRIS, USAF, VICE COMMANDER, AIR COMBAT COMMAND, U.S. AIR FORCE

General HARRIS. Well, thank you, Chairman Turner and Congressmen Wenstrup, Chabot, and Stivers. Thank you two also for your service and serving as Congressmen.

The opportunity to discuss the Air Force capabilities and the challenges delivering air superiority is a great venue, and we appreciate your time.
As the Vice Commander of Air Combat Command, I have the privilege to oversee 140,000 airmen and civilians. Air Combat Command is responsible for organizing, training, and equipping the air superiority mission. This mission, as you have heard in the opening comments, is instrumental in achieving freedom of maneuver in the air, on the land, and on the sea, and it is a precondition for success.

I am grateful the committee shares our interests and that we are looking at the advancement of air superiority, and I know that your combined concern and collaboration and work with us will assist in achieving these results and what they provide to the country.

Air superiority capability remains at the highest level, but our near-peer adversaries are closing the gap. The image you see with me today over my left shoulder illustrates our F–35 compared to a Chinese J–31. It depicts our adversaries are not only impeccably imitating platform design, but they are also achieving comparable capabilities and technology. Improvements in the future and investments are certainly necessary to continue to outpace the adversaries in advance of this crucial mission.

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

General HARRIS. My first main point. We recognize the absolute imperative need for air superiority and its importance in ensuring our national defense. The goal of ACC is to be so capable that our enemies choose not to fight. During Operation Iraqi Freedom in 2003, the Iraqi Air Force chose to bury their MiG–25s rather than face American airpower. That is exactly the response we are looking for.

Our fourth generation fighters continue to effectively maintain air superiority in the permissive environment, but advanced air defense systems are making that more difficult. Our advanced fifth generation fleet have moved into a more prominent role of anti-access aerial denial, but continue to be in limited numbers, and they are used as a balanced approach with our fourth gen [generation] fighters.

It is critical to rapidly increase our fifth generation fleet to ensure that the air superiority capabilities in the future are maintained. Along those lines, I would also like to thank the team for the five F–35s that were added to our upcoming fiscal year purchase.

Second, our challenges do occur and are maintaining the dominant reign in air superiority, but Air Combat Command has a vision and a plan to ensure continued success. One of our largest, our most expensive to overcome in terms of money, manpower, and time, is the size of our force. We have 79 fewer fighter squadrons now than we did in Desert Storm, and we are more than 500 fighter pilots short on our rolls. We have enacted a fighter enterprise redesign to study and actively fix this. The Chief of Staff of the Air Force also commissioned Air Superiority 2030 Enterprise Capability Collaboration Team—and, Chairman, if you're okay, I will refer to that as ECCT from here on out—and that is to highly address the contested anti-access area denial environments of the future.

This plan highlights the requirements of a family of systems for success, and multiple domains will include new air superiority
fighter aircraft. Agile, efficient acquisition will be the critical enabler to attain this budget within a relevant timeline. Forty-four years ago was our last combat loss in air-to-air arena in Vietnam. Yet, near-peer adversaries are working towards being capable of ending that winning streak. It is the goal of ACC to advance air superiority capabilities to ensure that this never happens again.

I thank you for the invitation to participate in this important hearing and to share our ideas on how to advance the mission in defense of our Nation. I welcome questions, sir, from the chairman and from the members, and ask that my written testimony be entered into the record.

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

Mr. TURNER. General, thank you.

There have been recent news reports about the supply chain for spare parts for operation of our equipment, where even museums have been raided for some of their parts. In fact, as we were touring today, one of the members with us said, “I wonder to what extent this museum is in the inventory supply chain of spare parts for the Air Force.”

Could you please speak for a moment on the pressures of sequestration, the effects that it has had? And one of the items I would also like you to mention is the effect that it has had on rated fighter pilot personnel. So both overall what you see sequestration doing, but also the concern of our ability to maintain air superiority while having the personnel, the manning to be able to accomplish it.

General HARRIS. Well, thank you, sir. Those are great questions. Sequestration is hard on the services, and not just the Air Force, but the entire Department [of Defense]. We are struggling and we are challenged to achieve the missions success that our country expects of us, and that is winning in a dominant fashion.

As much as sequestration has hurt, we need a stable budget that we can count on for year after year for our plans because, as you said, our fifth generation fleet is going to look different now from what we planned last year because of the changes that we have put in front of us each year. So our approach to that is, yes, we have a lot of fourth generation airplanes that we have intended to retire. We would like to get out of the fourth generation business to a fully fifth generation fleet, but we need to do that on a timeline that is both fast enough to ensure we have enough fifth generation airplanes and not so fast that we outsize our ability to train to that mission.

So we will continue for the foreseeable future to fly older, fourth generation airplanes with dwindling parts supplies, as you mentioned, where we will have raids to museums. Really, we have a boneyard process of airplanes that have been retired that are in the desert in Tucson that we are able to go out and pull parts from as airplanes as we need to, and we can’t get them from diminishing manufacturing supplies. That will continue to be a problem for us over the next decade or two as we fly these older airplanes, yet we try to modernize them with newer parts, with upgrades to give us better capabilities with that, and that is one of the ways we are trying to work through the sequestration, as a teammate, rather
than an adversary. That is part of what we need to do for our support of the Nation.

When it comes to the people and the cuts we have had to take for the last 5 or 10 years, the Air Force has gotten smaller in an attempt to preserve the equipment that we have, but we realize we went too far, and we would like to thank Congress for the help in growing over the last couple of years, well this year and next year, the authorized growth that we have had, which allows us to start getting at some of the manpower shortages. Fighter pilots are one of those, so we have increased our throughput of both Air Education [and] Training Command pilot production, and then we are going to add in 2017 and 2018 additional F–16 training squadrons to produce more fighter pilots in general. So that is part of it, and we would also like to thank Congress for the increase in the aviation career incentive pay, which allows us to retain a few more of our experienced pilots, which is important to us also, not just developing and bringing new ones on.

And then finally, sir, maintenance. That is another manpower issue we have had where we have had significant cuts in our maintainers, and I would say right now the Chief quotes, every squadron is 90 percent manned, so a 10 percent shortage. So 1 of every 10 people are not in the squadron doing work. That applies to our maintainers also. And we are finding that getting their expertise back is not easy, so we are trying to do some of our easier maintenance work at our training locations with contract maintenance so we can continue to produce and get the training and readiness that we need. Those contracts have to be hired from somewhere, and a lot of the times a young maintainer who is on a flight line realizes they could do the same thing in a civilian environment and not have to deploy and do those things. That is going to be another drain on us. So we are working both the pilot side and the maintenance side to fix that.

Mr. TURNER. General, the numbers I have indicate that due to experience levels and the needs in air superiority squadrons, that you may already be over 700 pilots short of your projected plans. Give us a feeling as to what that means. What does it take to catch up, and what does it mean if we continue with that shortfall?

General HARRIS. Sir, again, that is a great question. Your numbers are right on. We closed out last year over 511 fighter pilots short of what we need to be 100 percent manned. We expect to close this year out just over 700. So your numbers are on target.

What that means, the impact is that right now we are still able to man all of our flying organizations at 100 percent, but all of our supporting staff—so my command staff, headquarters Air Force, those staffs are manned at about 25 percent, right in that vicinity. So every place you should have four fighter pilots, you have one doing all of that same work, providing the information, and that is impacting our ability to plan and foresee things in the future and to do the things that we need from a staff perspective.

How do we fix that is the increased production at the start to try and build an additional 100 pilots a year so we can reverse the trend of losing more and start building more, and we won't be able to fix a 700 shortfall in a year, but we will also retain some of the more experienced pilots, which are the ones that we have worked
10 or 15 years to develop, and they have a lot of combat experience that we would like to retain.

So we are working on both ends of that spectrum, and we do that through job satisfaction, through the pay and incentives that they get with that and, to be honest, taking care of their families, because that is the most important part is taking care of our airmen.

Mr. TURNER. Because just hitting the number, as you just described, is not the only issue. It is ensuring that they have the experience level. As we look to the operational capability of the F–35, we need to make certain that we have the greatest capability not just in the aircraft, but also in the pilots that are flying them.

General HARRIS. Yes, sir. That experience in the F–35, as obviously we are building that today, but the way we initially put the cadre into the F–35 on both the maintenance and on the operational side is to have pilots that are experienced in other weapons systems, so they are new on the systems, but they are experienced in the overall environment, and we are doing the same thing for the maintainers. We are cross-training them. Instead of an A–10 or an F–16, they are now working on an F–35, and that is an easier transition than taking a brand-new start from a technical recruit and building them up, which we will be doing that shortly also.

Mr. TURNER. Thank you.

Dr. Wenstrup.

Dr. WENSTRUP. Thank you, Mr. Chairman.

You know, that graphic there is very telling and obviously very concerning and likely a pretty clear indication of their ability to tap into what we are doing and our technologies. So given where we are right now as you look at that, you could say they are pretty much copying the outer structure, and as we continue to develop the F–35 and modernize it because things are changing so quickly, how do we protect that from getting in their hands as well?

And I don’t mean to go into a classified area, but I mean let me ask it differently. Are we doing things at a higher level of scrutiny that may be able to protect us from them getting that information as well?

General HARRIS. Yes, sir. The way you present that is right on target. We are, but we are required to be transparent, and we see that now at the B–21. Where our approach is we want to tell Congress everything, and we do, we just do it sometimes in classified formats instead of open formats. But I don’t think between our relationship—I think it also goes back to our defense contractors and just our industrial database, and where a lot of this is being worked within their own facilities, that we are seeing our adversaries catch up with different things.

As you said, the mold line is exactly right. Those airplanes look very similar when you cut a line down the middle and you put them together. Clearly, there is some copying going on, but we see a lot of our adversaries are still struggling on some of the avionics. Their radars may not be as good, and they have engines that are not as good as what we are working on. So everything that we are putting together and integrating as a package, that is what is keeping us ahead of them, and to continue to make sure that we
are procuring at a number that allows us to have the numerical superiority so that they don’t want to fight us.

Dr. WENSTRUP. Maybe we can feed them some bad information in the same process or something along those lines.

So you talked a little bit, too, sir, about the challenges that you face with number of pilots, and you coupled that with budget reductions, lesser training opportunities, maintenance inadequacies. I mean, these are tough times. We get it. My question is how do we—and again, sometimes you are getting into classified information. But how do we best get the American people to get it and, for that matter, sometimes other Members of Congress to really understand the jeopardy that we are putting ourselves in?

General HARRIS. Well, the reason that we need to keep modernizing is so that we have fewer blue losses both in the air and on the ground. We are trying to keep our military alive and, to be honest, in a war, kill more of their military. That is what it boils down to. That is what it is looking at.

We just completed—the first operational squadron is not IOC yet out of Hill, but should be soon—just completed a deployment to Hill Air Force Base, and the airplane, while it is still immature, is performing fantastically. And how we get that information out to the public is very important. Using forums like this that are open will help us with that message. But that unit deployed, flew sorties, and then flew home. It was scheduled and planned to fly 88 sorties with 7 airplanes, and flew and actually were effective with 88 sorties. They didn’t drop a single sortie, and every one of the targets they struck they were 100 percent hit rate with precision munitions. So I couldn’t ask for more of a mature system, let alone an immature system, so that was fantastic for us.

And then because it is F–35 and fifth generation, flying where they were, they were teamed up with some fourth generation fighters in scenarios that only the F–35 was surviving and some of our fourth generation fighters were taking losses. So clearly, the airplane is performing the way we want, and when I talked with pilots two days ago, Thursday at Nellis, they are very pleased with it.

So we do have modernization work to do. We’ve got some other things we need to integrate, additional weapons systems to put into it, but it really is the airplane that we are looking for, and we are just trying to procure it at the rate that we need.

Dr. WENSTRUP. And certainly that is encouraging in that regard, but we are still asking so many to do much more with less, and I think that probably makes it tough on your retention as well, especially for pilots where there are opportunities in the private sector. You are always battling that, but maybe even now more so than others. If there are things that we can try to do from Congress to turn that tide, we would certainly always be interested in knowing what those things are.

But I think that that graphic right there is something that the American people need to see to know what we are up against. You bring up a very interesting point that we all recall from Iraq, where they buried their MiGs, right? They didn’t want anything to do with us. That is peace through strength. That is where we always want to be.
Anyway, I thank you, and I will yield back.

Mr. TURNER. Representative Chabot.

Mr. CHABOT. Thank you, Mr. Chairman.

I would like to reiterate something that my colleague, Congressman Stivers, said, and that is that I would hope the people in the Dayton area realize how aggressive you have been in protecting Wright-Patterson Air Force Base, that we are out here today. We have had innumerable conversations about sequestration and adequate funding for Wright-Pat, et cetera, and I know you have done that with our colleagues on both sides of the aisle to make sure that this air base gets the support that is necessary for it now and into the future.

My question, General, would be, could you discuss Wright-Patterson Air Force Base’s specific role in the near term and in the future in air dominance and the protection of our Nation?

General HARRIS. Yes, sir. Congressman, Wright-Pat has a storied history that everybody is aware of with the birthplace of flight and everything that started here. And I will be honest, when you look at Wright-Pat as an Air Force base, from Air Combat Command I don’t see fighters and bombers. What I see is that integral cell of all of our Air Force research labs that get their genesis from right here. It is the scientists and the people at Wright-Patterson Air Force Base that look at some of the theories and the advanced initiative that we are looking at. They study that across the labs and they task and get so much work done for us that allows us to look at what is next. If we have fifth gen airplanes that are so capable that are being cut, should we now look at sixth gen? We see a lot of genesis coming from that.

The way we treat a weapons system, it starts and ends right here at Wright-Pat with our Air Force LCMC [Life Cycle Management Center], and it is our life cycle maintenance command that, cradle to grave, from an airplane when it first starts or, to be honest, any weapons system, because they are not all airplanes, we have our command and control to include our human design and our development of people, it all starts and ends right here. So that is significantly a portion of what Wright-Pat does.

But we have other organizations such as SIMAF [Simulation and Analysis Facility] that takes some of our capabilities and helps us integrate those and shows us what we can do across the spectrum, and that power is central right here.

Mr. CHABOT. Thank you very much, General.

Next, General, I know we have already referred to the graphics up there, but I think the similarities illustrated in there are so striking that it says a lot just by looking at the picture. Could you discuss, to the extent that you can in a non-classified setting, what role cybersecurity warfare has in something like this and how seriously we as a nation need to take that?

General HARRIS. Sir, cybersecurity has a huge role, because any information that we are doing in today’s age, it is going to be electronic, what we are doing back and forth. We have ideas on the back of bar napkins, but we are using computers to plan, process, and disseminate everything that we are doing. So cybersecurity will play a huge role in that, and that can be a weakness at times when people are trying to steal things from us. So we have a huge
defense effort that comes down to every single airman, soldier, sailor, and marine to make sure that we are doing what we are told to do and using the systems as we are supposed to rather than circumventing those, and that is not just the military, but that is with our defense contractors and everything else.

We will always have concerns of espionage and other events, but how we use these systems in cybersecurity, we can actually start monitoring some of that and making sure that we understand what is processing and who is doing what on our classified systems. That significantly helps us because that is the internal threat. It is the unclass [unclassified] side for the external threat.

And in cyber also is getting to play a role as a warfighter. It is its own domain from an airman’s perspective, and we think that air superiority can be helped through cyber. There are things that our cyber professionals can do to reduce the effectiveness of an adversary’s capability, and that is something that we are looking at very hard now and working our way through for the future.

Mr. CHABOT. Thank you very much, General.

Chairman, I yield back.

Mr. TURNER. Mr. Stivers.

Mr. STIVERS. Thank you very much.

Thanks, General, for your testimony. I will quickly just comment on something that both Congressman Wenstrup and Congressman Chabot brought up.

When you look at that graphic behind you, it is clear that is not by accident. This is a deliberate stealing and copying of our technology. We are lucky they cannot perfect it today, but we have to do more in cybersecurity. I don’t think our problem is with our uniformed personnel. I think we have an agency problem with a lot of defense contractors who are supposed to protect American secrets, and it is not always their bottom line they are protecting. It is the taxpayers and our own secrets as a country, our technology. So I am going to continue to fight to make sure that we raise the level of requirements on those contractors to protect our true national secrets.

So, that was more a comment than a question, but I just want you to know that the folks in uniform are doing a great job, but we need to expect more from our contractors, and there are people out across the world trying to steal our technology every day, and you can tell by looking at that picture that that was no accident. That is stolen technology, and I am sure they got it through some cyber stealing. So we need to all, as a country, pay attention to that and be ready for the future.

So I do want to talk about—you answered some questions from Congressman Turner—about the shortage of your rated pilots at this point. To what role can the Air Force Reserve and the Air National Guard help this shortage by either allowing some of their pilots to be called to active duty or maybe assuming some missions? I know you said you are actually shorting your own command staff and other things like that to meet the need at this point. Could those organizations supplement your staff and other staffs as well to make sure that we are able to meet the needs we are supposed to meet?
General Harris. Well, sir, that is a great question, and to be honest, they are already. They are in the exact same position we are in. The staff that I talked about that is 25 percent manned includes my Guard and Reserve teammates. The 55 fighter squadrons that we have today includes our Guard and Reserve teammates. So they are wearing the same uniform we are wearing, and they are part of this daily effort with us. So the same pressures that are on me are on them. As the airlines are hiring now and continue to do more in the future, which is always a draw for pilots in any service, they are seeing the same vacancy rates that we are.

As long as we have the ability to continue to use the Guard and Reserve, if you take airmen who are going to get out regardless of what we do and retain some of them for that capacity and that call-up in the future, then I think they are hitting the mark and doing exactly what we ask of them. Yet, as you know, they are doing so much more because they are deploying at a rate that is significantly above what we call the strategic reserve, and they are as ready as we are or as unready as we are on the active side, and they have been fantastic teammates for us.

Mr. Stivers. Thank you, General.

With regard to the fourth and fifth generation aircraft, do you believe policymakers in Congress should actually dedicate resources to upgrading our fourth and fifth generation aircraft to make sure that we can maintain our technological edge?

General Harris. Yes, sir. I would say the team is from Congress and OSD’s [Office of the Secretary of Defense] perspective. We are dedicating resources in that direction. We do need to upgrade our fourth generation airplanes to make sure they meet the mandates to fly in the airspace and to have the required equipment to just be able to fly like any other airplane, the airlines, those types of things, since we are changing our airspace structure, but then to continue to update the defensive and offensive systems that are on those. We are making our recommendation as to where those should go because 10 to 15 years from now, in the contested environments, the highly contested environments that we are talking about for air superiority, there may not be much room for fourth gen airplanes. That is why we are so concerned about giving the fifth gen at the rate we need. And, yes, we are still updating the F–22 and modernizing it with the systems that go through it to make sure that as the threat evolves, so does our aircraft to stay in front of that, and we are doing the same thing with the F–35.

So we are currently buying Block 3F-type airplanes, and we will soon have a Block 4 that’s coming off, and what goes into that is part of the ongoing study that we are doing for the Defense Department, and then we will look at the funding from Congress through the normal processes.

Mr. Stivers. Thank you.

I yield back to the chairman.

Mr. Turner. Thank you.

Representative Stivers’ question is a great passing of the baton in the work that I get to do next. As you know, I chair the Air and Land Subcommittee, which means I write the portion of the bill for the National Defense Authorization Act that covers the acquisition programs for the Air Force and the Army. We have gone through
the House version of the bill, which has passed the House floor. The Senate bill is proceeding. There are differences between the House bill and the Senate bill, and here is my opportunity to ask you questions that can help us in conference in advocating on the side of the House bill. That is the context in which the question is being given to you.

Representative Stivers indicated about the modernization of the fourth generation and the fifth generation. Although we will achieve the F–35, we will have to continue its modernization which, because of the manner in which the plane operates, the heavy reliance upon electronics, as you indicated, is a significant undertaking and its modernization.

The GAO [Government Accountability Office], which is actually based here at Wright-Patterson Air Force Base, recommended that the F–35 follow-on modernization be treated as a whole separate acquisition program rather than just a continuation of the F–35 program. On the House side we were able to defeat that measure. There was an amendment offered that would have implemented that GAO recommendation, and the reason why we defeated it is because we had additional information post the recommendation from the GAO, and that additional information is that it would result in a 6- to 12-month delay and over a $13 million cost increase overall in the maintenance and the modernization of the F–35.

Now, General Bogdan has indicated his opposition and that, in his assessment, that the delay and the increased costs exceed the benefit of having the modernization program being treated as a completely separate acquisition program.

General, do you have a perspective on that?

General HARRIS. Well, Chairman, thank you. I do, but part of that is outside of ACC’s area of expertise. So I will defer on the cost and the schedule delays to the JPO [Joint Program Office]. I have no doubt that their authenticity is correct. I can say that. I suspect they are very accurate with what they say because they are the ones closest to it and looking at it.

My concern as Air Combat Command is if we do that, the additional oversight that we are looking at the program will cost more, but more importantly it is going to delay the upgrades, and it is not minor things. It is upgrades to the electronic warfare system. It is radar enhancements. It is new weapons integration. It is all of those things that we are trying to get to mature this weapons system in a hurry, and any delays that we have are going to impact not just the U.S. Air Force, but all three services that are flying that and all of our partner nations that are part of this funding. They are paying their portion for the upgrade for the first time ever in any other weapons system. When they bought F–16s, they just paid for what the Air Force already paid for, and now they are part of that investment. So I would hate to delay that because it might put in jeopardy other funding sources.

So my recommendation is that those capabilities become at risk if we delay, so we shouldn’t delay.

Mr. TURNER. Thank you. Well another provision that is in the House version of the NDAA is looking at the cost of restarting the F–22 line. Now, the Air Force Chief of Staff recently said that it is not a crazy idea. I will take that as an endorsement.
Mr. TURNER. Obviously, there was a significant amount of shortfall in the number of F-22s that were produced. That goes directly to the capability of your command. Would you please give us your view of the issue of the shortfall in the F-22, any thoughts that you have on trying to produce additional ones to increase your overall command capability? As you know, you have—I believe it is 187 have already been produced, a shortfall of 194. General.

General HARRIS. Chairman, I think we as an Air Force and a country would have been better suited to have those additional 194 airplanes already in the inventory and being participants in everything that is going on, and it may have changed some of that calculus for what our adversaries are doing. But we just completed the 2030 Air Security ECCT study, and those results have been out-briefed to the Chief, and he has accepted those. One of the recommendations in that was not to restart the F-22 line.

The major concern was that the funding that would be required would be significant and it would take away from additional funding of somewhere else within the service that is probably a higher priority, and there is nothing higher priority than air superiority. But the concern is that we would be 5 to 10 years away from the delivery of the first airplane because in 2009 when the line closed, all of those subcontractors have moved on to other things. We would have to rebuild that base. It is not a short-term fix. And then when we started taking delivery of those airplanes, the airplane itself would be 20 years old, and we are ready for what is next, and that is part of what that study is recommending.

So as we look at those requirements and the future capability, we think it is wiser to keep the investment in the F-35 at the production levels that we need for our fifth gen to fill in where the gaps were from the F-22, and that will allow us to bridge into what is the follow-on to those two platforms.

Mr. TURNER. General, I am aware of that study, of course, and our aspect of requesting the study that is in the House version of the bill is actually doing a holistic view of what would those elements be. Whether it be the F-22 or not, we are going to need something more than just the F-35. I know that your concerns, as are evident throughout the Air Force, is budgetary. You would not want to cannibalize one system in order to be able to launch another.

But I am certain that as we have additional discussions, I am going to ask you as we close off our round to give us greater detail as you describe the F-35 and the fourth generation and how they work together. Having more cards in your deck of greater capability I am certain will be important.

So the study itself gives us greater fidelity on some of the things that you identified. It doesn’t conclude. It really does that holistic assessment of what would it take, which could result in an additional—a different airplane. But it certainly should look at that, recognizing the gap, that you have a gap.

General HARRIS. Yes, sir, we do.

Mr. TURNER. What would it take to fill in that gap, and what are our overall costs?
So I appreciate that, and we look forward hopefully to the Senate agreeing to getting a greater understanding of what are those missing elements to study, and I will just rely on the Chief of Staff saying it is not a crazy idea.
With that, Dr. Wenstrup.
Dr. WENSTRUP. Thank you.

So a little bit, somewhat off the main topic, but overall air superiority. We look at the global threats and potential threats and the ability to be a deterrent, as well as to fight terrorism and to stay ahead of our traditional adversaries. Do you feel that we are positioned forward enough in the world, in enough locations? Let me give you an example.

An Army guy’s observation serving in Iraq. I had a chance to go up to Sulaymaniyah in Kurdistan for a couple of days while I was deployed for a year, and my thought as the war went on and as we were being more successful—and ultimately I say we won that war; and since, things have changed. We won that war, and I thought the Kurdish area would be a great place for an air base. It was the only place I went in Iraq where I didn’t wear armor. We were loved. They love Americans. We would be so central in the Middle East. We would have a show of force and authority there, and what a great place this would be for an air base, and I still think that if the climate was right.

But my question really comes down to do you think with today’s threats that we have, are we forward positioned enough with our air forces to be comfortable?

General HARRIS. Sir, that is a great question. And you and I, based on your military background, look at it a little differently from our perspective. Your Air Force deploys really quick. It doesn’t take us weeks and months. It is normally days and sometimes hours to get into place to do what we need to do. So I balance our ability to be forward with our requirement to defend our homeland and to be home where we get some of the best training, because when I am forward at those bases, I kind of have to limit my training because a small country that loves us as an organization, as an American people, I still have to train outside their borders, and I don’t want to give up things to my adversary where they can see what I am doing on a regular basis.

So we have some strengths for that. And on that argument, if you look at my active duty F–15 placements right now, if you are an active duty F–15 maintainer, F–15C maintainer or pilot, your only places are Japan and the United Kingdom. We have no continental U.S. for those to go. So if that is what you do, you are either overseas at one or the other locations, or you are flying with one of our Guard units. It is flying them here in the continental U.S. for homeland defense mission, or you are on a staff. And again, I only have 25 percent on my staff.

So it is not easy already. We are fairly forward deployed. Yes, there is that deterrent, that “fight tonight” effort, and that applies both to the Pacific and Europe, and we are just as concerned with everything going on in Europe. So we started “Rapid Raptor” deployments to where overnight airplanes show up and nobody knows that they are coming other than the host nation that has invited us and the training that we do, and we are seeing that from a lot
of our new NATO [North Atlantic Treaty Organization] allies, saying come more often and stay longer, and we do understand that. But we do have to have that balance between being able to train and have that white space at home to also be ready for.

Dr. WENSTRUP. Yes, and we are seeing movement by the Chinese, as you know, without going into too much detail, that is concerning. So I am sure that that is something that you have to watch on a constant basis.

So as we are talking about fourth and fifth generation, one of the things that I think is Members of Congress, and the military as well, our role is to always be looking towards the future, what do things look like 20 years from now. So I am just curious how we are doing on sixth generation.

General HARRIS. We are doing well, at an unclassified level.

Dr. WENSTRUP. Very good. That is all I need to hear.

And then I guess one more question I do have is specific to Wright-Patterson. So how important is the role of Wright-Patterson in Ohio for the future of our air dominance?

General HARRIS. I am impressed every time I come to Wright-Patterson. The people I see around on the base, it is just a—the density of those smart scientists that are warrior technicians that have come here, they really seed our labs across America. So we come here from an airman’s perspective and try to give that operational flavor so that, as we look at the things that they are studying and doing at Wright-Pat, how that might apply to us. We actually have some of those, that 25 percent of fighter pilots. We have some of those on the staffs here at Wright-Pat, and AFMC [Air Force Materiel Command], just to help General Pawlikowski and the team out so that we know what can bridge and what is not going to go anywhere from what they are looking at.

Quite often they will say, hey, this is a success, we just don’t know how to use it, and you get that in the hands of an operator or a maintainer and they say I know what to do with that. So how we work together with it, a lot of that happens right here at Wright-Pat, and that is kind of the focus of where we get a lot of our research.

Dr. WENSTRUP. Very good. Thank you.

I yield back.

Mr. TURNER. Mr. Chabot.

Mr. CHABOT. Thank you, Mr. Chairman.

General, I am also on the Foreign Affairs Committee and chaired the Middle East and Asia Committees in the past, and we have had innumerable hearings with respect to Asia, and China in particular, and how aggressive they have been of late, in the air and on the sea and building islands, and now militarizing them, much to the chagrin of much of our allies in the region, from Japan to South Korea to the Philippines, Taiwan, and countries that we have better and better relations with, like Vietnam now. They are all very, very concerned.

Do you believe that the current planned F–35 squadrons are adequate to maintain a forcible presence in the Pacific theater while maintaining our current commitments in Europe and the Middle East, for example? And with current force projections, do you be-
lieve that we will be able to maintain our air superiority with respect to China over the next decade and into the future?

General HARRIS. Congressman, that is a great question because the next decade really is of concern. If we are acquiring 48 F–35s a year, China will have more fifth gen fighters 15 to 20 years from now than we have based in the Pacific, and that is including what the Marines are doing in Japan and what the Air Force intends to do with future basing and where we are going in the Pacific.

So in a “fight tonight” scenario, they may actually outnumber us with airplanes like that than we are. That does go back to that forward deployed question that we spoke about earlier. What is in theater does matter, and both in the Pacific and Europe we look to make sure we’ve got sufficient to deter, but that we’ve also got ready forces at home that can reinforce, and we are concerned.

The number of F–35s to procure a year is probably closer to 60. The program of record says we should be at 80 a year, and that would allow us to have the numbers there sooner before China can get their fifth generation airplanes fully operational. We think that would deter that conflict, but I don’t think it is going to stop them from still building any islands, and we will continue our freedom of navigation exercises in the air and on the sea to deter and make sure they recognize what we consider international laws and norms to be.

Mr. CHABOT. Thank you. Thank you, General.

One area we haven’t touched on really yet this morning, and since this will be my final question I will at least touch on it, and that is with the increased reliance of unmanned aerial vehicles, UAVs or drones, how do you see the integration of UAVs with the planned strategic roles of our F–35s, for example, and our other assets? How does this all fit in, and how important is it?

General HARRIS. Well, if we looked at today’s UAVs we would probably think of it from a fourth generation perspective, the way they are being employed with a manned cockpit somewhere back in the U.S. or wherever they happen to be flying. And again, we are doing that in our Guard, Reserve, and our Active, teaming up with somebody that is forward deployed.

I think, though, as we look at the air superiority study that we have been talking about, part of that does talk about UAV teaming and doing that in more of an autonomous fashion. We have that machine-to-machine communication so that while we still have people in the loop, they are not having to necessarily do as much as they are doing today of physical flying. So maybe then one crew can fly five UAVs, or one manned aircraft can have a dozen UAVs flying off of it and taking commands and signals from it.

So we are looking at that from that air superiority study, which would make this much more defensible, and the risks that you can take with an unmanned system, or at least no person in the forward of the airplane, can actually help you with that if somebody is back flying from somewhere else. That is a different risk calculus, and we are willing to do that to achieve our Nation’s goals.

So that is part of that study, and that is part of the family system. So it is not going to be a single silver bullet that solves any one of these. I think it will be a follow-on to the F–22 and the F–35, not just the 15 and 16. But it will also be improvements to our
current UAVs that will all come together with our cyber and the assets that we bring from space to make this a solvable problem.

Mr. CHABOT. Thank you, General.

Mr. Chairman, yielding back, I would just like to say I think this has really been a great hearing. The information that we have received from the general here is very important and helpful to us, and we will take it back to our colleagues. Thank you.

Mr. TURNER. Thank you.

Representative Stivers.

Mr. STIVERS. Thank you.

I would like to follow up on the last question that Mr. Chabot just asked. General, could you talk about the importance of voice and data communication in future air dominance?

General HARRIS. Very important, and right now voice communication is a lot of times our primary mode of communication. Our fifth gen and our fourth gen don't talk as well together as we would like to, machine to machine. So we are actually using the aircrew voice to get the information back and forth, and, I would be honest, that is probably third generation.

So we are working on a couple of projects and efforts to make sure that we can get communication and awareness that the fifth gen airplanes bring down to the fourth gen fleet, to our command and control, to everything else, so that all of our sensors that are so far forward and doing great work because they can penetrate air defenses, come back and provide that information to everybody. So that makes it critically important, and we have a couple of different paths we are working on.

Not all of it is based in the air. Some of it will be land-based, some of it will be space-based. So it is a family of systems, again, to get to that solution.

Mr. STIVERS. Thank you.

General, could you talk about the impact any reduction in the 1,763 aircraft requirement would have on ACC’s capability and capacity and readiness to meet the requirements for fifth generation fighter aircraft to assume air dominance in support of the national military strategy?

General HARRIS. Congressman, it is hard to talk about that reduction because 1,763, if we are producing, let’s say, 60 a year, that is still buying F–35s out in the 2030s. So I am less concerned about the overall number and the rate that we are acquiring them to make sure we can deter and defeat, if necessary, our adversaries in the next decade or so. If our further study in sixth gen says that we are able to develop and come up with a family of systems that allows us to stop production early on the F–35 and move into something else, I think we are willing to do that. But we don't know what that number is at this point, so I would rather not speculate.

Mr. STIVERS. Thank you.

General, I really appreciate your testimony today, and I just again want to commend Chairman Turner for his leadership on the Tactical Air and Land Subcommittee and what he has done to protect Wright-Pat and build a consensus in the Ohio delegation to help further our national security and make sure that we can be a major player right here in Ohio through Wright-Pat and the
things that are happening at Wright-Pat. I want to just comment and add to the comments that all my colleagues have said.

Wright-Patterson is a very important strategic asset for the United States, not just for the United States Air Force, but for the United States. To the thousands of men and women who are working here at this base to help ensure that you can provide air superiority, General, I just wanted to say thank you to them, and thank you to Congressman Turner for making sure that he supports them and our national military the way he is doing. I wanted to acknowledge his leadership.

I yield back, Mr. Chairman.

Mr. TURNER. Thank you.

General, I appreciate your comments to what Dr. Wenstrup said and Representative Stivers said. You focused on highlighting what Wright-Patterson Air Force Base does, and I just want to underscore one aspect of the debate that we always have in Congress with respect to personnel and how it affects Wright-Patterson Air Force Base.

The issue of civilian career personnel continues to be a ball batted around in debates in Congress. But as you know by what you just described, the engineers and the scientists here at Wright-Patterson Air Force Base are largely going to be career civilian that populate NASIC, our National Air and Space Intelligence Center, and are doing the assessments on what our adversaries like China are doing and what we need to make certain we put in your hands to scope what the threat is.

The Air Force Institute of Technology. Of course, there we have the graduate school here at Wright-Patterson Air Force Base populated by professors and assistants and those that make that system work, largely again going to be career civilian. The Air Force research labs, the engineers and scientists that really try to define what is the possible, because here at Wright-Pat it is not just the battlefields of today, which are also a focus, but it is also the battlefields of tomorrow, what can we push in our boundaries of knowledge, just as the Wright brothers did, to make certain you have that air dominance.

And of course, all of the acquisition support that we have here that is necessary for contract management, the oversight that we expect our government to do, is done largely by career civilians. So thank you for highlighting the fact that they play an important role in your combat command and ensuring our dominance.

I want to go back to that topic again of dominance. You in the beginning foreshadowed the issue of fifth generation and fourth generation flying together. You also foreshadowed that our intent to retire fourth generation, as we look to 2030, we are going to be in a blended formation. Could you please give us a description, if you will, where people can understand how does fourth and fifth generation work together, and how is it going to ensure our capability as we look to that time period when fourth generation may be retired?

General HARRIS. Yes, sir, in an unclassified format. The air superiority approach, because that is what we are primarily talking about from this, with the fifth and fourth gen working together, can get sticky pretty quick. So in not so much an air superiority
role, but in today’s fight, when the F–22s fly over Syria, their sensors see so many things and share that across the spectrum through our command and control efforts, that fourth gen fighters that would not otherwise have been aware have much more situational awareness, and that is what fifth gen brings to the fight.

In an air superiority type of a role, we expect the fifth gen to be the only things that can initially penetrate, go in and make some of the initial kills or reduce an enemy’s IAD [integrated air defense], which will then allow fourth generation to even participate in the battle, and if that is a long distance away, it may take days and weeks to get air superiority. If it is something near, it just may take multiple sorties over a day or two period.

But if it is truly in a highly contested environment, that’s going to include an integrated air defense where it is both aircraft and SAMs [surface-to-air missiles] and the entire package that an adversary brings against us, fourth generation may not have much play in that for a while until the air superiority portion is gamed and our adversary recognizes that this is important to us, we are not going to give up, and we are going to continue to risk our fifth gen aircraft, our people, the things that we need to do to get the Nation’s tasking done, and then fourth generation will be able to step up and participate at that point.

That is our concern, the blended effort. We are leaning more towards fifth gen as quick as we can.

Mr. Turner. So in other words, fifth generation can go into a contested environment and clear the way so the threat level is lowered so that fourth generation can go in and continue to fight in the contested environment.

General Harris. Yes, sir.

Mr. Turner. Excellent. Thank you.

Dr. Wenstrup, closing questions, comments?

Dr. Wenstrup. I did have one other question. You talked about 700 pilots short from where you would like to be. So where does the Air Guard come into play with that, and is their role helpful in that regard?

General Harris. Yes, sir. When I say 700 pilots, that is fighter pilots. We have shortages in other weapons systems also. But the Air Guard, they are seeing similar vacancies, although not as fast as the Air Force is. They are probably only a couple of years behind us. To be honest, they are on the leading edge of the airline hiring because several of those have already taken those job applications based on what they are doing but continue to fly for the Guard, which is exactly what we are looking for on a part-time basis.

Where we are finding concern in the Guard is that they are deploying so much to support places that the Active Duty can’t go to because of our readiness and our OPTEMPO [operational tempo] already, that someone’s saying I was deploying this much when I was on Active, why would I expect to do that now when I am in the Guard? We find that they are getting some pressures that they haven’t seen in decades before based on their OPTEMPO also. I think they are in the same boat as we are.

Dr. Wenstrup. Okay. Thank you.

So in conclusion, I want to thank you, General, for being here today and for everyone here accommodating us so well. It has been
said by my colleagues here the relentless nature of Chairman Turner and his concern for this base, and for our Air Force and our military in general. I can speak to it firsthand, serving on two committees with him, and on his subcommittee, and I thank him for his leadership in that regard.

Thank you. I yield back.

Mr. TURNER. Well, I want to thank all my fellow members for attending. As they've described the aspect of protecting Wright-Patterson Air Force Base, it is both a game of advocacy and a game of whack-a-mole. Every now and then, we have to make sure that we do defend the assets that are here, but we also advocate for them, and every member here has been a part of that, and I greatly appreciate their support. Thank you for taking your Saturday to come out and do this.

But I want to assure you that it is not just a Saturday morning that these gentlemen have given. They are part of what Ohio deploys in order to protect Wright-Patterson Air Force Base and to advance the Air Force.

General, thank you for your service and thank you for your team giving their Saturday, and also for the team from the Air and Land Subcommittee. We appreciate them traveling here to be able to do this. General Harris, we hope to welcome you back to Wright-Patterson Air Force Base and the assets that are here. But thank you for your leadership, and thank you for giving us this insight.

As you know, from your position, your answers are not just informative; they actually translate into policy. We have to take them back and place them in the legislative decisionmaking and in debates that help us ensure that you have what you need. So, thank you for helping us today.

General HARRIS. Sure.

Mr. TURNER. With that, we will be adjourned.

[Whereupon, at 11:14 a.m., the subcommittee was adjourned.]
APPENDIX

June 18, 2016
PREPARED STATEMENTS SUBMITTED FOR THE RECORD

JUNE 18, 2016
Statement of the Honorable Michael Turner  
Chairman, Subcommittee on Tactical Air and Land Forces  
Hearing on Air Dominance and the Critical Role of Fifth Generation Fighters  
June 18, 2016

The hearing will come to order.  
The subcommittee meets today to receive testimony on air dominance and 
the critical role of fifth generation fighters.  
We welcome our distinguished witness for today:

- **Major General Jerry D. Harris, Jr, Vice Commander of Air Combat 
  Command, United States Air Force**

General Harris, we thank you for your service and look forward to hearing 
your important testimony today.  
This hearing will be the first of two oversight hearings the subcommittee 
plans to hold on air dominance and the critical role of fifth generation fighters.  
Air dominance means that friendly aircraft can fly anywhere in enemy 
territory and can also be effective at performing their mission.  
Today’s ground and naval forces count on our combat air forces to provide 
air dominance so that movements of troops, supplies, weapons and ammunition 
can quickly be brought to bear in order to win decisively.  
Here at the National Museum of the United States Air Force, I can’t think of 
a more appropriate place to begin this series on air dominance.  
Those of you who have toured the museum have noted aircraft such as the 
P-51 which was developed in World War II to defeat the threat posed by the German 
Luftwaffe. The Korean War brought new challenges such as the jet-powered MiG- 
15, which our Air Force answered with the F-86 eventually resulting in a 14-1 kill 
ratio over North Korean fighter aircraft. The Vietnam War saw the advent of 
radar-guided surface-to-air missiles which resulted in the development of the F- 
105G Wild Weasel aircraft designed to detect and destroy those missiles which 
were threatening our Nation’s capability to achieve and maintain air dominance.  
After the Vietnam War, lessons learned and technological advances by both 
our Nation and near-peer adversaries required the introduction of new fighter 
aircraft like the F-14, F-15, F-16, and F-18, which we call today, 4th generation 
fighter aircraft, characterized by improvements in maneuverability, radars, sensors 
and weapons. That fleet of aircraft overwhelming achieved air dominance in the 
first Gulf War, Operation Desert Storm. Although modified somewhat to keep 
pace with threats, our fighter aircraft inventory today is comprised largely of those 
fourth generation fighter aircraft we used in Operation Desert Storm.
Like we have seen historically since World War II, our adversaries have not stood still in their efforts to counter American air dominance since Operation Desert Storm. Integrated air defense systems with more powerful radars and more-accurate and longer range missiles have been developed. Many of these systems are mobile so they’ll be much more difficult to target. Our adversaries are also developing advanced fifth generation aircraft which include the Russian Sukhoi T-50 and China’s J-20 and J-31.

To maintain future air dominance, our Nation will require a fleet of fifth generation aircraft characterized by a much lower radar signature to negate our adversary’s advances in radars and radar-guided missiles. Our fifth generation aircraft will also need to have machine-to-machine interfaces giving pilots unprecedented situational awareness of where those mobile surface-to-air and air-to-air threats are in real time.

Our air dominance force of the future will need to have the capability, capacity and readiness to meet those future challenges and threats.

The Air Force’s current fleet of fifth generation fighter aircraft consists of the F-22 and the F-35 Joint Strike Fighter. This subcommittee has received briefings from the National Air and Space Intelligence Center or NASIC on the threats we are currently facing, and I am convinced now more than ever that we must resource and invest in fifth generation fighter capability. The investments we make now must be based on capability and countering the threats facing our national security.

We only produced 187 fifth generation F-22 aircraft, but that number was 194 aircraft short of the requirement for 381 F-22s. Unfortunately, the decision to stop F-22 production was a strategy driven by budgeting goals rather than one driven by the need to obtain a required capability. That’s why the House Armed Services Committee directed the Secretary of the Air Force to provide a report to the congressional defense committees on the costs associated with restarting the F-22 production line to procure those 194 additional F-22s.

Regarding the F-35 Joint Strike Fighter, the Marine Corps achieved initial operational capability in the F-35B Joint Strike Fighter with 10 aircraft at Marine Corps Air Station Yuma, Arizona last year. Between August and December of this year, the Air Force will achieve its initial operational capability with the F-35A at Hill Air Force Base, Utah.

This is good news, and indicates the F-35 Joint Strike Fighter is remaining on cost and schedule; however, we’re not currently procuring F-35s at the rate we had planned even last year. That’s why the House-passed National Defense Authorization Act for Fiscal Year 2017 added five F-35As to meet last year’s Air Force F-35A budget plan for 48 aircraft in fiscal year 2017, an unfunded requirement identified by the Air Force Chief of Staff. The House bill also added
additional F-35Bs and Cs for the Navy and Marine Corps, also unfunded requirements identified by the Navy and Marine Corps.

Our Nation has met the challenges to air dominance in the past, and I am confident we will do so now and into the future, but we must remain committed to providing the resources necessary to provide the capability, capacity and readiness necessary to accomplish the critical mission of maintaining Air Dominance.

Before we begin, I would like to turn to my fellow subcommittee member and colleague from Ohio, Dr. Wenstrup, for any comments he may want to make.
SUBJECT: Air Dominance and the Critical Role of Fifth Generation Fighter Aircraft

STATEMENT OF: Major General Jerry D. Harris, Jr.
Vice Commander, Air Combat Command

JUNE 18, 2016
INTRODUCTION

Chairman Turner, Ranking Member Sanchez, and distinguished Members of the subcommittee, thank you for the opportunity to discuss the Air Force’s capabilities and challenges delivering Air Superiority on the modern battlefield. As lead command for the Combat Air Force, Air Combat Command is responsible for the organizing, training, and equipping of the Air Superiority mission. This mission is instrumental to achieving freedom of maneuver in the air, land, and sea domains, and is a precondition for success. It is the first mission that must be successful if we are to effectively impose our military will and might upon an enemy.

We have enjoyed a healthy advantage in Air Superiority in all of our armed conflicts since Vietnam. This advantage, brought about by our airmen, their training and tactics, and our advanced aircraft, weapons, enabling systems, and battlefield networks, has become so constant that it is almost assumed. The thought that we are unable to destroy an enemy target at will from the air, or that our Armed Forces are at risk from enemy air attack has not crossed the minds of military leaders in decades. This is all because of our overwhelming advantage in Air Superiority.

But our Air Superiority advantage is being challenged. The unapologetic lead we have held for so long is shrinking as our near peer adversaries, and those with which they proliferate, have stolen, developed and fielded technologically advanced systems including aircraft, missiles, and surface to air networks and weapons systems that can challenge our ability to gain and maintain Air Superiority. Highly advanced anti-access area denial (A2/AD) technologies are making many formerly accessible areas now contested. America cannot effectively wield its military as an instrument of national power without the means to control the skies. When this means can be challenged, our ability to deter and dissuade washes away and is replaced by an adversary who sees a weakness, which may be all that is required to alleviate their aversion to armed conflict.

Improvements and future investments are certainly necessary to increase the capability and capacity of this indispensable mission. As one of the Air Force’s twelve core functions, Air Superiority is conducted and supported by assets, networks, and airmen from across our force. Today Air Superiority is provided by a mix of fourth and fifth generation fighters, supported by a highly refined command and control network, and flown by the world’s best trained Airmen dominate this critical domain. With the proper readiness, development, investment, and commitment, America can retain and even expand our Air Superiority capabilities and bestow upon the next generation of Airmen, and Americans, what our predecessors bestowed upon us – the freedom to maneuver our forces where we want, when we want.

VALUE OF AIR SUPERIORITY MISSION

Air Superiority is defined as control of the air that permits friendly forces to conduct air, land, and sea operations without prohibitive interference by the enemy. It is the key that enables
freedom of action for all joint military operations. When a two ship of F-15Es simultaneously delivers forty precision guided munitions against targets deep inside enemy territory, Air Superiority clears the path. When our HH-60s fly a low level ingress and insert our Pararescuemen to recover a wounded soldier or downed airmen, Air Superiority guarantees their access. When our Remotely Piloted Aircraft spend days or weeks tracking pattern of life and the location of a High Value Target, Air Superiority ensures there is no enemy aircraft or surface to air missile system engaging it. When our Carrier Battle Groups approach hostile coasts, Air Superiority prevents enemy air threats from turning them back. When our ground forces advance and push the forward edge of the battle area further into hostile territory, Air Superiority eliminates threat aircraft and protects our ground forces from aerial attack, enabling friendly maneuver and engagement. And when enemy commanders keep their aircraft on the ground, too afraid to fly, American Air Superiority is the reason why.

How we approach the Air Superiority problem is slowly beginning to change. This change is energized not by our technological advancement, but by our enemy’s. It is becoming too problematic and expensive to dominate a near-peer’s densely populated Integrated Air Defense Systems. Gone are the days where the Air Superiority term could be interchangeably swapped out with Air Dominance. Our ability to completely own 100% of air activity over an adversary’s territory, 100% of the time, is waning. Our enemies have a say in this argument.

But at the same time, if we approach Air Superiority objectively we are led to the same results. When a commander asks why we need Air Superiority, the answer is usually to meet a specific objective such protecting our ground forces from attack, or allowing our aircraft access to strike targets. In the future we will focus on having Air Superiority at the time and place of our choosing. We will gain it when and where we need it to accomplish the mission rather than continuously maintain it over an entire theatre. We only turn on the lights when we are in the room, and we turn them off when we leave. This approach is more affordable and effective versus a peer or near-peer adversary.

Air Superiority plays an important role not only in prosecuting combat operations, but also in avoiding them. Although deterrence is usually thought of in reference to nuclear war, or the avoidance of, it also applies to conventional combat. Our goal for Air Superiority is to be so capable that the enemy chooses not to fight. While this objective is becoming more challenging to attain, it is still within reach. And the payoff is more than worth the effort. It is a traditional tradeoff between short term loss, or cost, and long term gain. The key is to have enough capability to win convincingly. That will give pause to any enemy bent on aggression. Attaining that capability is not cheap. However, it is far cheaper than engaging in combat. So while we may be changing how we look at Air Superiority, our objective of having it when and where the joint force requires it remains unchanged.

The legacy and heritage of American Air Superiority is found in many combat stories. Occasionally there is an opportunity to showcase the deterrent effect of American Air Superiority. On August 2nd, 1990, Iraq invaded Kuwait. Over five days, Iraq amassed over 120,000 troops, mechanized divisions, and armor in Kuwait, knocking on Saudi Arabia’s door. In one day, the US Air Force responded by deploying 48 F-15Cs non-stop from the 1st Tactical
Fighter Wing at Langley Air Force Base. The Iraqi forces moved no further, and the historic buildup of Operation Desert Shield began. This emergency deployment of our front line Air Superiority fighters sent the strategic message to the Iraqis of the seriousness of our commitment. Deterrence, especially the Air Superiority kind, carries immeasurable value in both peacetime and war.

HOW WE CONDUCT AIR SUPERIORITY TODAY

Gaining Air Superiority is a function of our Airmen, their tactics, techniques, and procedures, the technologically superior weapons systems they employ, and access to strategically important locations. Our dominance in these categories has safeguarded the skies and secured access to them for decades. If we falter or are overtaken in any of these areas, our ability to gain and maintain Air Superiority will be threatened, and our country’s capability to successfully conduct joint combat operations will be greatly diminished.

Currently, the US Air Force conducts the Air Superiority mission with a mix of 4th and 5th generation aircraft. Our 4th Gen fighter fleet consists of the F-15C, F-15E, and F-16. These aircraft play a significant role in the near term, especially in the capacity realm as we have few operational 5th Gen fighters. The role of our 4th Gen fighters will diminish over time due to two main reasons. The first is they will age out and be replaced by more capable F-35s. But more pressing, the second reason is our 4th Gen fighters will soon become unable to operate in highly contested environments where advanced air defense systems may render them useless. The rate at which we procure F-35s will now have a significant impact on our Air Superiority capabilities as we cannot slow the rate at which the enemy develops and fields advanced area denial systems. Slowing the rate at which our 4th Gen fighters age is possible, but it consumes scarce resources required to field 5th Gen aircraft and develop the next generation of capabilities required in the mid-2020s and beyond.

Our advanced 5th Gen fleet consists of the small fleet of F-22s and the growing F-35 fleet. Our F-22 fleet outclasses every adversary aircraft currently fielded, but must be modernized to keep pace with aircraft and weapons that will be fielded in the near future. Additionally the small number of F-22s we were able to procure leaves us with a less than ideal 5th Gen capacity until F-35s grow in sufficient numbers. It is critical to rapidly field numbers of F-35s to increase our capacity in the Air Superiority mission in the near-to-midterm.

While the characteristics and roles of our various Air Superiority fighters may differ, what remains uniform is their requirement to integrate and communicate, including 5th to 4th Generation Data Links. Our airborne networks are key to dominating the battlespace. They guarantee our forces a high level of situational awareness ensuring our tactical and operational moves are based on current information which gives us operational agility. When we can conduct follow on actions before the enemy has reacted to our previous move, we win. Having superior decision speed is how we position ourselves inside our adversary’s decision cycle, and a key to doing so lies in our communication and data link capabilities. A fully integrated 4th and
5th Gen fleet is under development and will maximize our ability to find, fix, track, target, and engage the enemy.

Our operators conducting the Air Superiority mission are not limited to just fighter aircrew. Operators from almost every Air Force platform play an important role in attaining Air Superiority. To adequately prepare our operators for this mission, our training must be robust. Large force integrated exercises aid in this preparation, sharpening our Airmen’s’ skills. However with the increase in adversary capabilities, our capacity to simulate or replicate these threats in appropriate numbers is one of our training challenges, impacting readiness. The Air Force currently faces a shortage of adversary air and threat replicators, and requires increases in our training airspace. Simulator missions are a significant first step to resolving some of these issues. Our linked simulator missions, where our diverse aircraft from across the Combat Air Force participate in challenging virtual combat missions, has opened up vast opportunities. However, it still falls short of requirements. Our operators need to train to the A2AD threat in realistically simulated combat environments. Improvements in our threat replication systems and capacity, coupled with continued investment in new Live, Virtual, Constructive (LVC) training systems will help alleviate this live-flying shortfall. While our current training capability has a long way to go to meet desired requirements, it is still the highest quality training in the world.

Our weapons and sensors also play a key role in conducting the Air Superiority mission. For years, we have been able to conduct first look, first shot, first kill tactics. Our more powerful and sensitive radars tracked more targets further away and our missiles had a longer range and a higher kill probability. Today our primary air to air missile is the AIM-120, a medium range missile. Originally entering service on the F-15C in 1991, the AIM-120 today is increasingly challenged by adversary counter-measures and it limits our 5th Gen aircraft effectiveness. It also carries insufficient range versus newer long range adversary missiles and will soon require recapitalization. But the capabilities of our missiles are not the only limiting factor. It is also our capacity. Our aircraft lose effectiveness when they run out of missiles. As we look to the future, increased aircraft payloads and deeper magazines will be a driving requirement for our next generation aircraft.

To conduct Air Superiority our aircraft need to be in a position to employ their sensors and weapons. This position, and our ability to remain there, is chiefly a result of our forward basing options and our ability to refuel. Having the best Airmen, aircraft, and weapons in the world is very effective in a defensive posture at home, but virtually useless abroad unless suitable forward basing options are available. We have made recent strides conducting operations with our partners in Eastern Europe and the Pacific where we have deployed our aircraft and conducted joint exercises and operations. These are positive steps towards the goal of obtaining access to suitable locations to forward deploy our forces should Air Superiority be required beyond our shores.

Our ability to secure forward operating locations requires strong alliances and joint operations with partners. When operating from forward deployed locations, our forces must integrate with coalition forces to conduct all operations, including Air Superiority. And while we will take the lead in Air Superiority missions, our partner and host nations will certainly
participate to the maximum extent possible. Global Air Superiority is not just a function of American airpower but coalition airpower, and our coalition’s capability in Air Superiority relies on the same functions as ours: their airmen, weapons systems, and tactics. Joint exercises and training ensures our ability to project power alongside our allies, further strengthening our capacity to ensure freedom of maneuver for all coalition combat forces.

When our coalition has met the requirements to conduct dominant Air Superiority missions, their execution may not even be required. During Operation Iraqi Freedom in 2003, having not forgotten the lopsided defeat they experienced in 1991, the Iraqi Air Force chose to bury their MiG-25 fighter jets rather than face an American-led airpower coalition. Having lost several jets in their attempt to flee to Iran twelve years previous, Iraq decided concealing them under several tons of sand was the best option. In 2003, Iraq did not launch one single fighter aircraft to challenge American Air Superiority. This is the response we desire, and it will remain achievable with the proper and continued investment in Air Superiority.

CURRENT AIR SUPERIORITY THREATS

In the Cold War, American Air Superiority had one mission and one clear adversary. In the years following the Cold War, the threat receded, Air Dominance became a buzzword, but our peers regrouped. After witnessing the lethal consequences sanctioned by American Air Superiority in multiple conflicts over the past 25 years, they grasped the reality that challenging our freedom of movement was key to slowing us down. It now comes as no surprise that our near-peer adversaries’ capabilities have been modernized to specifically counter and negate American capabilities. These new emergent threat systems range from 5th Gen fighters and integrated air defense systems to anti-space and standoff weapons. And whether these threats materialize in the Pacific or European AORs, they share very similar traits. Our next step in securing our ability to gain Air Superiority into the future is to counter these systems designed to counter ours.

New threat surface to air systems now incorporate technologies allowing engagement at further ranges in greater numbers. The sensitivity and accuracy of these systems has also increased, calling into question the unrivaled ability of our aircraft to access anywhere at any time. Many now also claim the ability to acquire, track, and target low observable platforms like our stealth aircraft. Today’s Surface to Air Missile threat is a combination of legacy, modernized legacy, and digital systems which can be linked to enhance cooperation and efficiency. But advanced technology is not the only way capability is increased. One can look no further than 1999 when a Serbian air defense battery operating a 1960s-era SA-3 system with modern agile tactics, was able to adapt to the battlespace, and acquire then shoot down an F-117.

Although aircraft are some of the most expensive and challenging systems to develop and field, our competitors have made progress in the quest to match and counter American aerial capabilities. We are witnessing the emergence of advanced aircraft such as the T-50 from Russia and the J-20 and J-31 from China, with full expectations that foreign military sales are in their future. These new aircraft may possess levels of stealth, super-cruise, and advanced passive and
active sensors that can pose problems to our dominance of the skies. They are also integrating innovative data-link technology similar to ours, which coupled with the internal carriage of newly developed long range active missiles, threatens one of our longest winning streaks. The last time the US Air Force lost an aircraft in aerial combat was 1972 when DESOTO 03, an F-4E supporting Linebacker II, was shot down by a MiG-21. These advanced aircraft from Russia and China signal their objective to end that 44 year dynasty.

Another strategically important issue threatening our ability to conduct Air Superiority is our access to and defense of deployed locations. Russian and Chinese ballistic and cruise missile modernization programs are far more robust and survivable today than they were ten or fifteen years ago. Ballistic missiles, armed with conventional warheads, are an incredibly capable platform that can negate our ability to use airfields and runways across the world, including the PACOM, EUCOM, and CENTCOM theaters. Advanced cruise missiles now include stealth technologies and increased range, and are a potent threat, especially considering they can be launched from a multitude of platforms and locations. It is important for the United States to be able to locate these threats and neutralize them left of launch. That will only be possible if we develop a family of capabilities that includes a new counter-aircraft and improvements in our C2, ISR, Space, and Cyber capabilities.

Our near peers have also been very busy modernizing their ability to threaten our enabling technologies and systems such as the electromagnetic spectrum, space, and cyberspace. The main goal of these advanced programs is the denial of communications, and this includes the ability to kinetically or non-kinetically attack our space assets, jam and confuse our tactical and strategic communications networks, and hack our computer systems. Air Superiority, especially the American version, relies heavily upon fast and efficient communications. Attacks upon our enabling systems could reduce our Air Superiority assets from a totally integrated system to individual aircraft with radars. The American doctrine of centralized control, decentralized execution could be decapitated, and we would be left with systems stuck mimicking operational tactics from the Vietnam era, where visual acquisition and identification became the norm. Our competitors realize this area is one of our greatest advantages, and denying its use could be all the leverage they need to level the playing field.

CURRENT INTERNAL CHALLENGES

Challenges to our Air Superiority do not all originate from foreign shores. Some challenges are internal to our Air Force and nation and must be continuously evaluated based on the current and future requirements of our collective defense. One of the largest and most expensive, in terms of money, manpower, and time, to overcome is the size of our force. In 1991, the US Air Force had 134 fighter squadrons. Today we have 55 total force fighter squadrons. While we are no longer required to defeat regional adversaries in large scale multi-phased campaigns on two fronts, we are beginning to lose our capacity to do so on just one.
In addition to our reduced force size, our Air Superiority capable units, the majority of which fly dual role aircraft such as the F-16 and F-15E, have been focused on different missions over the last 15 years. The combat operations conducted post 9/11 have been almost entirely air to ground driven in a permissive environment. Access to and freedom of maneuver within these areas has had limited to no role in our prosecution of combat operations. There is no debate as to whether these operations were necessary, and our force successfully acclimated to the requirements of the combatant commanders. But the drawback is that our units have spent less time training to the Air Superiority mission, especially conducting operations in contested and highly contested environments. Due to this reason, our capability is not where it needs to be. Improvements in training operations are necessary to fully exploit our potential in Air Superiority.

Another second order effect of 15 years of near continuous combat deployments for our fighter force is the current manning levels. The Air Force is short several hundred fighter pilots and that number is projected to grow. What does not make most charts and spreadsheets is that a mid-career Major with over 1500 hours in fighters carries exponentially more value to the Air Force than a brand new Lieutenant straight from the Formal Training Unit, and it is these Majors we are losing when their commitment expires. When a fighter pilot chooses to leave the Air Force, we not only lose their body in a jet but their vast and irreplaceable experience. It took ten years to build them, and it will take ten years to replace them. Our Air Superiority mission occurs now and it will not wait ten years for us to catch up.

THE WAY FORWARD

To counter the recognized challenge of keeping a healthy and energized fighter pilot force, our service has enacted a study titled “Fighter Enterprise Redesign”. Our objective is to identify and remedy the issues facing our fighter pilot force so that our shortfall becomes a surplus. The actions resulting from this study may take some time to apply as we must balance our missions of preparing for the future with providing for today. But rest assured, the Air Force fully comprehends the drastic manpower shortage facing our Air Superiority mission and has plans in place to remedy.

Concerning the future of our Air Superiority platforms and mission, the Chief of Staff of the Air Force commissioned the Air Superiority 2030 Enterprise Capability Collaboration Team (AS 2030 ECCT) to develop capability options to enable joint force Air Superiority in the highly contested environment of 2030 and beyond. One big takeaway from this study is that there is no silver bullet. We will need to develop a family of air, space, and cyber capabilities to prevail in the highly contested Anti-Access/Area Denial environments of the future. We need to develop a new counter-air aircraft that is more survivable, lethal, and has a longer range and bigger payload. We will also need to continue to develop our C2, ISR, Space and Cyber capabilities. This multi-domain approach is resilient, enabling highly contested operations. Importantly, to field these capabilities within budget on a relevant timeline we must become much more agile in
our acquisition strategies. Agile acquisition is the critical enabler for our future Air Superiority capability.

CONCLUSION

April 15th, 1953 is a significant date for our Air Force. It is the last time U.S. ground forces were killed as a result of enemy air attack, when a North Korean PO-2 biplane strafed an Army tent on Chodo Island off the Korean peninsula. In the last 63 years, American Air Superiority has relentlessly safeguarded the lives of our Armed Forces, provided freedom of maneuver and freedom from attack.

The United States Air Force has endowed our country and our allies with dominant Air Superiority for decades. As long as there are enemies whose objectives clash with ours, America will require this capability. The United States Air Force is positioned to supply what our country demands, and with the proper planning and investment, we can ensure freedom of maneuver for our forces well into the future.

I thank the committee for their dedication to our Armed Forces and the attentiveness to the Air Superiority mission. I have no doubt that this partnership will continue to propel our forces and the combat output so desperately desired by our combatant commanders. I look forward to continued collaboration and the success it will bear for the Joint Force and our Nation.
Major General Jerry D. Harris, Jr., USAF

Maj. Gen. Jerry Harris is Vice Commander, Air Combat Command, Langley Air Force Base, Virginia. He assists the Commander in organizing, training, equipping and maintaining combat-ready forces for rapid deployment and employment while ensuring strategic air defense forces are ready to meet the challenges of peacetime air sovereignty and wartime defense. The command operates more than 1,300 aircraft, 34 wings, 19 bases, and has more than 70 operating locations worldwide with 94,000 active-duty and civilian personnel. When mobilized, the Air National Guard and Air Force Reserve contribute more than 700 aircraft and 49,000 people to ACC. As the Combat Air Forces lead agent, ACC develops strategy, doctrine, concepts, tactics, and procedures for air- and space-power employment. The command provides conventional and information warfare forces to all unified commands to ensure air, space and information superiority for warfighters and national decision-makers. The command can also be called upon to assist national agencies with intelligence, surveillance and crisis response capabilities.

General Harris entered the Air Force in 1985 as a graduate of the ROTC program at Washington State University. He has served as a flight commander, operations officer, weapons officer, and inspector general. The general served on the staffs of two numbered Air Forces and one major command, all in operations. He has also served as the Combined Air and Space Operations Center Battle Director for operations Iraqi Freedom and Enduring Freedom. General Harris has commanded at squadron, group and wing levels. Prior to his current assignment, he was the Director of Programs, Office of the Deputy Chief of Staff for Strategic Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.

General Harris is a command pilot with more than 3,100 flying hours in the F-16.

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

ASSIGNMENTS
2. January 1987 - April 1987, Student, AT-38B lead-in fighter training, Holloman AFB, N.M.
3. April 1987 - December 1987, Student, F-16 B-Course, MacDill AFB, Fla.
4. December 1987 - July 1989, Chief, Current Operations Division; Squadron Assistant Programmer; Training Officer; and Mobility Officer, Nellis AFB, Nev.
12. March 1999 - August 2000, Chief of Strategy, Crisis Action Group, Headquarters Southern Region Air Command, Naples, Italy
21. November 2008 - September 2009, Commander, 8th Fighter Wing, Kunsan Air Base, South Korea
22. September 2009 - September 2010, Assistant Director of Operations, Plans, Requirements and Programs, Headquarters Pacific Air Forces, Hickam AFB, Hawaii
24. September 2012 - March 2014, Vice Commander, 5th Air Force, Yokota Air Base, Japan
26. April 2015 - present, Vice Commander, Air Combat Command, Joint Base Langley-Eustis, Virginia

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

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

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

EFFECTIVE DATES OF PROMOTION
Second Lieutenant May 11, 1985
First Lieutenant Sept. 1, 1987
Captain Sept. 1, 1989
Major Sept. 1, 1995
Lieutenant Colonel April 1, 2000
Colonel Jan. 1, 2006
Brigadier General Nov. 3, 2010
Major General June 27, 2014 (Current as of May 2016)