

**General Michael Hostage**  
**Commander, ACC - AFA - Air Force Breakfast Program**  
**July 29, 2014**

**General Hostage:** Thank you, and good morning. General [Shaud], I was just thinking all those years back there as a young [FATE], back then that legend was sitting in the chair over Creech and he was rumored to have said I don't want any of those damn [FATES] in my command. [Laughter]. And I was one of those young lieutenants who heard that. Whether he said it or not, it doesn't really matter, but it's somewhat ironic that I'm sitting there now.

I was telling John Tirpak that I'm kind of like your 80 year old grandma. I've reached the point where I talk loud because I can't hear myself anyway, and I say what I want. I don't care who hears me. I'm going to tell the truth and I'm going to tell you what I think because at this point there's not much they can do to me. My successor's been named and so it's kind of the handwriting's on the wall.

So where are we? Air Combat Command. I normally start these, I talk to different groups and I tell them what Air Combat Command is and what it does. But General [Shaud] made an interesting point about readiness. I've been going out to different ACC units and talking to them and explaining to them force shaping, explaining to them why they shouldn't take this military downsizing personally. This is not about you as an airman. This is our nation reshaping itself as we've done historically through the eons here.

But the commitment I made to them, to each one of those airmen, is, I will not send you into combat unless you are organized, trained and equipped to do what we're going to ask you to do. I will get fired before I will send somebody who's not ready to go.

Now that means some painful decisions if the debacle of the summer of '13 when we grounded a third of the Air Force to deal with sequestration was kind of filling that promise. At the time when six months into the fiscal year they say oh my gosh, you're right, you're sequestered. Guess you better figure that out. We had to absorb the sequestration cut. We had already been overspending because of the rules of the Continuing Resolution. Then, oh by the way, we're not going to reimburse you for OCO. We had to absorb all of that in six months. When we did the math, that would mean flying, in a normal operational

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unit, only flying the aviators once or twice a month. So I said that can't happen. So we figured out who we could keep fully operational and who we had to stop.

The pressure from other places was oh, you can't ground anybody. Don't do that. That would look bad. But there is no definition for flying below what we call the BMC rate, basic military capability rate. That's safe to fly, safe to fly in the weather, but not combat ready.

Then there's combat mission ready. Combat mission ready is the minimum at which I want to send -- That's not where I want my force to be. I want my force to be somewhere way above CMR. But combat mission ready is the minimum definition to send them into combat.

On a normal daily basis our units fluctuate between BMC and CMR. We'll have hopefully a fair portion of the force at a CMR or better but then there's the element that's somewhere between BMC working themselves back to CMR. We were talking about taking the entire unit somewhere well below the BMC level. That was just morally unacceptable. So that meant grounding a whole series of units in order to ensure taking the resources from those units, plugging them into the units that had to be ready to go because they were next on the rotation to go into the hopper. Or they were my ready force to go.

By the end of the grounding period, three months and a week, we had eight combat ready airplanes in the CONUS that weren't already on rotation or preparing to go. In other words I had no reservoir force were a contingency to pop up. A Syria, Iran, North Korea. Something pops up that's not one of our phase zero ongoing operations. That was how bad it got. I was up here on the Hill all summer trying to explain to the members of Congress, here's the reality of what sequestration does to us. We have to stop this. We have to get us back out.

We have clawed our way back out of that hole. It was a long struggle because three months and a week translated to better than six months of trying to rebuild the force, get it back up to step, and we were still fiscally challenged in doing that. Then partway through we had the end of the fiscal year and we

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had the government shutdown. That set us back, that week and a half of shutdown set us back by about three weeks on the recovery. But we're past that. The good news is because of the Murray-Ryan agreement for '14 and '15, the mitigation of some of the impact of sequestration, we've had a relatively stable flying hour program. We've been able to commit resources to keeping the units fully CMR.

Again, facing '14 in the midst of the '13 sequestration, '14's flying hour program was less than '13. That's what I got whacked back to by sequestration. So the initial plan going into '14, FY14, was to take units down to BMC for several months and then work them back up to CMR, just to spread that lack of readiness across the force, not to drive units into grounding again. Because while I thought I could get away with it once. To tell my units, hey, we are in the midst of a crisis. Our part of getting out of this crisis is for you to take a knee for a while. They could accept that. I don't think they can accept it if I go back to them year after year and say all right this year we're going to ground you. I think we would run into a morale issue pretty quickly if that were the modus.

So '14 was originally looking like I was going to have to go through this cyclic readiness process just to distribute the load, that lack of readiness. The Murray-Ryan agreement gave us the funding to not have to do that. Murray-Ryan only gave us a partial payback for '14. A little bit less for '15. Added all that back on on the back end of sequestration. So we're going to hit the same spot at the bottom of the cliff. It's just going to be a slightly shallower glide path to get there.

Honestly, I think that's going to happen. I don't see anything happening that's going to end sequestration, that's going to end the fundamental problems that are driving -- Sequestration is just a result. It is a by-product of the deficit issues, the fiscal issues that the country is not yet dealing with.

Based on that I'm telling my force we have to be ready to deal with a sequestered budget for the duration of the law. When I explain, that's what force shaping is about. We are driving our force down to the size it will have to be, when at the end of sequestration, that 309 or whatever the actual number, 308, 309,

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whatever the final number is, 308 or thereabouts, that's the number we have to be at in order to be sized for the sequestered budget throughout the duration of sequestration.

I tell those young airmen, my job, as Air Combat Command commander, my job is not to whine about whether I have enough resources. My job is to produce as much combat power as I can possibly produce for whatever the nation allots to me to do that. I tell them even if we do the full sequestration, all ten years plus the two from the agreement, we can still be the finest Air Force on the planet, the most capable Air Force on the planet. Smaller. Not able to go as many places at once, but wherever we go we will dominate. But we have to be able to make some very hard decisions now and through the next several years in order to be able to do that. The challenge is politics re not letting us make those hard decisions. We proposed a budget that's horrific from the standpoint of what we're doing to the force. Cutting the A-10s, KC-10s, U-2s. And it's not that I don't want KC-10s, U-2s or A-10s. Absolutely not. I have need for those capabilities. I just don't have the resources.

My job is to produce combat power, and I can get the most combat power out of platforms that have multiple capabilities, not single mission platforms. Thus, while I'd like to keep an A-10. I'd like to keep a force of about 250 of them, I don't have the funds. In order to still produce combat power across the range of military options that we have to be prepared for. But politically, I don't think we're going to be allowed to do that, and we're going to be handed back a series of things without funding, or they'll reprioritize funding within my current budget over things that are deemed less important, but less important to whom? Not to the warfighter. But we'll deal with what we have to deal with. Our job again, is to produce as much combat power as we can produce for whatever we're allotted.

But when we were 700,000 airmen and we were 100 fighter squadrons, twice the size we are now, back when I came in the Air Force, we could live with the perturbations of politics on the periphery of producing military capability.

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We're shrinking our force down to the point where we're going to have serious challenges trying to live with some of the non-military decisions that are getting forced into the equation. We don't have the latitude anymore to hang onto the amount of force structure we have or the infrastructure.

I could close one in three bases across the command and still have plenty of infrastructure to deal with my forces. But politically, closing a base is just not going to happen. So we're carrying this baggage along and we're getting small enough that that baggage is having a serious impact on our ability to produce maximum combat power. But in the end, our job's not to whine and complain, it's just to do it.

The good news, and I tell those young airmen, you can rest assured that this is a turbulent world and bad stuff is going to happen somewhere and they will turn to us and say defend us. We can't whine and complain about well, we just don't have enough of this or we're not ready. We have to be ready to go.

Readiness is the lynch pin for Air Combat Command, and I have to ensure that, the contract to those young airmen is I won't send you if you're not ready, so I'm going to make you ready. I tell the commanders every day, I want you to work to the maximum amount of combat capability you can produce. When you hit a limitation, tell me what that is. Don't push past it. Don't try to do more with less. Don't cut corners. Don't do the things that you're tempted to do because you don't want to report failure. Tell me what your limit is, stop at that point, and I will either fix that limit or we'll deal with it until the time comes that we can remove that limit. Because we owe it to those young airmen not to ask them to do anything more than what I can train and equip them to do. That's our mantra. Train and equip, organize, train and equip combat ready forces.

I know there are lots of questions out there and I would really rather respond to questions than sit here and sound like I'm whining, because I don't want to do that.

Honest to God, I try to finish with those young airmen and be optimistic. I mean I've just finished telling them why 25,000 of them have to leave the Air Force, so it's a little hard to

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then turn around and be optimistic. But the amazing thing about our force is the kids we have coming into the Air Force today are astounding. I'm glad I'm not 20 years old coming into the force now, because I'm not sure I could compete with this bunch.

We talk about the finest generation. I had a chance to speak to an AFA group a couple of days ago up in Massachusetts and I got to meet a Medal of Honor winner, Tom Hudner. Listening to his story about his generation, it gave me chills. But I said to him, Tom, you can be assured that the young men and women that form our Air Force today are every bit as astounding as your contemporaries that came in and saved us way back when. I believe that to the bottom of my heart, and that's what gives me confidence that as I move on and others move in, we still have the best Air Force on the planet and we can continue to be so if we go down the right path.

So I would offer you the opportunity to ask any questions about whatever I wimped out and didn't talk about.

**Question:** Amy Butler with Aviation Week.

You made some interesting comments before the Farnborough Air Show about the F-35 compared to the F-22. Can you clarify for us, what was the discussion about radar cross-section and the value of the F-35 if RCS vice the F-22? And can you also talk to us a little bit about your vision for infusing F-35s into the rest of the suite including with F-22s with this whole fifth to fourth, fifth to fifth discussion. There's been a lot of discussion about that and it seems like there hasn't been a lot of clarity on the topic.

**General Hostage:** I'll try to give you some clarity.

First of all, the variables of stealth, speed, altitude, we also try to figure out how to make a variable out of fusion, because that's really, we talk about fifth generation and most people think stealth defines fifth generation, but I don't believe that. Stealth is one of the characteristics of fifth gen, but I think the most amazing difference, fourth to fifth gen, is the fusion capability. The ability to take sensors and make the pilot no longer the fusion device, but allow the computers on

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board to be the fusion device. To me that's the defining characteristic of fifth generation. But the ratios of those different things.

And I would add to speed, altitude, stealth, fusion, and then magazine depth. Because that's one of my great frustrations with our weapon systems today is the limited magazine. I've got a platform now in the Raptor that can go into heinous territory at great risk, but I can only whack eight bad guys in the process. I've got to come back, get more and go back. I'd like to go over there and whack a whole bunch of them before I come back. So add magazine depth.

So there are a number of characteristics that make a platform valuable. So what the Raptor has that I think is truly unique is this combination of altitude, speed and stealth. The synergy of those three allow us to do things with that platform that no other airplane on the planet can do.

The F-22 doesn't have the speed or the altitude, but what it has is stealth -- Sorry, the F-35. Sorry. What the F-35 has is tremendous stealth and a generation or two better fusion than anything else out there.

What we're struggling with now is what is the right balance? We're already looking at what's going to follow the F-22 and the F-35. What will define the sixth generation if there is even such a term to be used? And what is the ratio of these different characteristics that will make a platform what it needs to be?

So the speed, altitude and stealth of the Raptor allows it to go places. The F-35 has this tremendous stealth capability, tremendous fusion, and the ability to work cooperatively with other airplanes that again, nobody else can do. The power of that airplane is in numbers. That's why I'm so adamant about the fleet that I've got to build of the F-35. It's got to be a sizeable enough fleet that I can put 4 ships and 16 ships up on a mission. I can't send two ships up of F-35s up on missions like I can the Raptors because the characteristics of those different elements I talked about require a different force

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structuring with the F-35. That's why 1763 is so important to me.

Fifth to fourth, fourth to fifth. Again, the defining characteristic of this fifth gen is this tremendous fusion capability. There's so much information on board that platform. I would like to leverage that information and spread it across my fourth gen fleet. We did not have the prescience to realize that that was really important when we built the system. Raptors talk wonderfully to each other. F-35s talk wonderfully to each other. They're not so good at talking to each other. One of my highest priorities I have my team working on is that fourth to fifth, fifth to fourth. How to take the intelligence of the fifth gen platform and spread it out to the rest of the fleet. And further increase its knowledge base with the sensors on board the fourth gen platforms. That's what's critical about fourth to fifth, fifth to fourth. It will give viability to the fourth gen fleet for a longer period of time. It will magnify the impact of the fifth gen fleet.

**Question:** Hi General. John Harper with Stars & Stripes.

Can you elaborate a little bit more on your plan for a sixth generation fighter in terms of what capabilities you're looking for, where it is now in the concept stage, and any time lines that might be available at this point?

**General Hostage:** We're doing studies now to try to figure out what defines that future generation. As mentioned earlier, given the length and the tortuous nature of our acquisition process, we're already behind the time line to get something on the ramp in order to properly phase out an aging fleet. I'm living with an ancient fleet at the moment. And General [Shaud] talked about in his opening remarks, we're struggling with the need to refurbish this current fleet as we try to replace it with this newer stuff. And the resources aren't there, and I'm being asked to trade, which do you want to do? Do you want to refurbish your current fleet or do you want to buy new stuff? Well, I need to do both. I'm told you can't have both, so which one do you want? So I'm trading off the current legacy fleet and the health of that legacy fleet because I think it's existential that we build the future fleet.

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So in terms of the follow-on fleet, we're already behind the time. It doesn't mean we can't get there. If there's one thing I've learned from reading the history books is it's American industry that has pulled us out of the fire after entering into the big conflicts that we've seen in our history. It's the surge of American industry that produce the capabilities that allow the warriors to triumph.

So we're defining what that future capability will be. I told Mr. Tirpak earlier, it isn't necessarily another single seat fighter, and I've been telling the teams that work for me, don't start into this process thinking it's going to be another single engine, twin engine, does it have a radar in the front, is it going to spread around the side. Don't be thinking in terms of a platform. Be thinking in terms of what is the capability that future technology will bring to us that will allow us to provide air dominance in the future. If it's the enter button on the keyboard that makes all the adversaries fall into the ground, I'm okay with that. That's fine. My job is to produce air superiority, air supremacy, and I'm agnostic as to how I do that. I know how to do it today and that's with air-breathing fighters, and I'm willing to do that for the next 10, 15, 20 years with that capability, but if something different comes along, I'm okay.

**Question:** Good morning, General. John Tirpak, Air Force Magazine.

During the sequester you had to cancel some weapons school classes, Red Flag. Can you tell us how those exercises are evolving? Are you preparing, as you said, for more sequester in the future? Are you moving towards virtual construct? Tell us how those keystone programs are going to change in the future.

**General Hostage:** Thanks. It was a tragedy to lose that class, 13-2. We can never recover from that set of graduates because time moves on. The flow of personnel moves on. Those kids will not get the chance to go, and if they do, they'll bump somebody else. That, anyway, that's just a tragedy.

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Weapons school is critically important to us. Nellis is critically important to us. Nellis for many reasons, for the many things that go on there, but one of the key components has been Red Flag over the years. Red Flag has been, since its inception, the highest level of training we could put our airmen through to get them ready for combat. Remember, the original theory was based on looking at previous war histories, you're least likely to survive in your first ten missions. If you could survive the first ten missions, the probabilities were you were going to make it to the end of the war. So they built Red Flag to replicate the combat environment, as close as you possibly could in a controlled peace time environment.

So fifth gen has brought us capabilities and lethalties that are straining my ability at Red Flag to produce that same realistic environment. I can't turn on every bell and whistle on my new fifth gen platforms because A, they're too destructive, and B, I don't want the bad guys to know what I'm able to do.

The good news is there's a live virtual constructive arena out there that I think will provide us the path to the future. What I see is reversing the training paradigm. Today Red Flag is the pinnacle event for combat training. Where we're headed, and we're trying to move ourselves to the future, I think for fifth generation that live virtual constructive arena will be the pinnacle event. I will still do Red Flags. I will still do live training in live platforms, but the place where I'll be able to take all the gloves off, turn on all the bells and whistles and get full capability is going to be in the virtual constructive arena.

Now if you look at the gaming industry today, the virtual reality capability, they're rapidly approaching the point at which you can't tell if you're in a simulated environment or a real environment unless you peek under the flap on the canopy there to see if you're in a simulator or you're in an airplane.

The day that I can replicate the kinesthetic awareness, all the sensory input that an airman sees in the airplane versus when she's in the simulator, then I think we've reached that point where I can now simulate everything that she would need to see

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in a combat environment. We're looking at how to build that live virtual constructive arena. Some of the challenges are technical. Some of them are policy. The ability to protect the networks that would run such a thing. So we're looking at how to build that, but that fundamentally is changing the paradigm to where I will do my highest end training in the live virtual constructive arena and I'll do more part pass training, I'll do more proof of concept training. What I've seen in the virtual arena I go out and yeah, the airplane really does that. Wow. That's impressive. Or the platform really does what I saw in the simulated arena. But that's where we'll get I think the highest end training.

One of the biggest limitations when you put 100 airplanes up over the Nellis range is the reality that nobody blows up when you take them out in the fight, and that fundamentally changes the dynamics of the fight. You go into real life when people really do blow up and it looks different. You react differently. You can't see that in a Nellis fight. We can see that in the virtual constructive arena.

**Question:** [Inaudible]?

**General Hostage:** I think the highest end, we do what we call a dash-3 series now which is U.S. only, where we integrate space, cyber and air and it is absolutely astounding. The things that they're doing now are frightening.

I love to tell the story about when I was a lieutenant launching out of Hill and going to the National Training Center to fly over the Army when they're getting ready to do force on force engagement. They'd let us do CAS for 20 minutes, then they'd shoo us away because it was time to have their force on force engagement. If they kept us around we would so fundamentally change the dynamics of the engagement on the ground that they wouldn't get the training they were programmed to get in that training evolution.

That's what's happening today in this air, space, cyber combined Red Flag. We bring the cyber guys and the space guys in and they play, but then we have to say all right, go to the bar and have a Mountain Dew, because you guys make it too damn dangerous

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if we take the gloves off and let you play. That to me is a very hopeful sign because we have some capabilities that are astounding, and the way they leverage our air power is very positive. But it's very difficult to do that in the real world of violence. Again, I need that virtual constructive arena where I can take the gloves off, I will have real time kill removal but I'm not going to hurt anybody. I will still fly live platforms. I still need to operate anything that operates because the warrior's got to know that every piece of equipment she has in her hands will actually do what she saw it do in the simulator. So you will always have to operate equipment, even if you go to this construct where your high end training is in the virtual constructive arena.

**Question:** [Inaudible]?

**General Hostage:** All right. So the mantra of our airmen forever has been centralized command, decentralized execution. It's what makes us uniquely different than our ground partners or our naval partners. That's how we leverage the unique attributes of air power.

I just published an article, or it should be coming out I think, in Joint Force Quarterly where I'm starting to inject the concept of centralized command, distributed control, decentralized execution.

One of the things that makes us exquisite today is the interconnectedness of our force. I spent two years in the Middle East kind of using the most elegant reach forward capability from the CAOC, running a fight 800 miles away in Iraq, 1500 miles away in Afghanistan from one central AOC. That connectedness has not gone unnoticed.

We have potential adversaries out there who are spending buckets of money and have been doing so for decades on how to take down this unique capability -- things that, our data links, our com networks, our PNT (precision navigation timing), radars. How to take away all the things that make us unique in the belief that if we did that we would turn around and go home because we wouldn't know how to fight.

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I believe that their capabilities are good, not perfect. They will be able to break the link, they will be able to degrade things. But we're training hard to deal with the TTPs it takes to plow through that kind of challenge so that air power keeps coming.

One of the concepts is that I believe they will break the link between the CFAC and his or her forces out there at some point. Episodically, periodically, but not permanently. But they will go up and down. I still want air power to come. I want the adversary to know in his evil little heart that air power is still coming after him even if he cuts all those links.

One of the ways that's going to happen is with distributed control still out there closer to the fight, closer and connected to the forward edge of the spear, still able to orchestrate and direct air power. That's what distributed control needs to do. I think the BMC-2 platforms -- AWACS, JSTARS -- fundamentally are the way we're going to be able to do that. That's why I'm working so hard to ensure we have a JSTARS capability. We're working on the next gen JSTARS and how to field that in the midst of this fiscal challenge. AWACS 4045 is going to give us the capability to do that distributed control.

Distributed control will happen from a wing command post. Distributed control is about having the CFAC putting intent out there so that if the link from the centralized command is broken, intent is still out there, distributed control will continue to make air power happen in that decentralized execution.

**Question:** As you transition to the old Reaper fleet what are you looking at in terms of an MQX or just a follow-on to the Reaper, something more survivable? And are you looking at what the Navy's doing as well? What briefings have you given to your office? Who's looking after that in terms of doing that capability?

**General Hostage:** We need to be able to fight in the full range of conflicts. Right now I have an over-weighted fleet that's really good at fighting in a permissive environment. I need to resize and reapportion that fleet. I don't need to get rid of

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all of my permissive ISR fleet. That would be foolish. What we're trying to do is scope it down to that MDS, the Reaper fleet because the Reapers still have some applicability on the edges of a contested fight, but only on the edges. It's got the range and the speed to maybe survive around the periphery, but it's not going to operate in a contested. I need the ability to produce ISR in a contested environment.

We have developed an expectation on the part of our joint partners that we're going to produce that staring eye on the battlefield 24x7. It's not going to happen in a contested environment, but I still need to be able to do on the periodic, episodic basis, to be able to provide the staring eye, provide the information that makes the key difference in the fight.

The kind of platform that does that is not an MQX. It's not a Predator, not a Reaper. We're working to build the fleet that will do that sort of, not necessarily the fleet, but the capability that will produce that type of ISR in the challenged environment.

**Question:** Sir, George Nicholson, Special Ops consultant.

AirSea Battle. About three weeks ago General Amos over at Brookings seemed to back away from it even more, indicating the concept, the issue is, was this an Air Force/Navy issue to take budget share away. And it was China centric. What disturbed me is about two weeks ago Admiral Greenert stood up, who had been a great supporter with Genera Schwartz of the concept said well, I had a Marine colonel come up and write an article and proceeding, I saw it. He came up and talked to me and I have to agree with him, it's badly named. There's an initiative by the Joint Staff to rename it, to make it less adversarial. Your comments?

**General Hostage:** We're inside the Beltway here, so reason and common sense, nothing makes sense inside the Beltway. To me, anyway. But that's because I get to live outside the Beltway.

I can understand the emotion that's attached to the term AirSea Battle. If you're not of the air or of the sea you're going to go whoa, what about me? Again, I wasn't around when they coined

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the term, I wasn't around when the process started. I don't believe the intent was to exclude anybody from a future force construct. It was look at the environment we are turning to face. The new national strategy says focus on the Pacific. All right. The two principle domains that predominate out there are 100 percent air, 70 percent water. So there was a natural reason for the two to come together and say how are we going to solve this puzzle?

I can understand the thought that well, we need to change the name because it's not politically correct. It's hurting people's feelings. I don't believe that was the intent, but I can't tell you who thought it up. So changing the name, I'm all right with that if that's what they need to do.

I think the value of what's being produced by getting airmen and sailors and ground forces together to think about how do we solve the problem in a highly contested environment that's composed of all this water and little bits of land, I think that's critically important, and that's got to continue. I don't care what we name it.

I came from an AOR where we were compressed into this relatively tiny little space of air and water in which the fight was going to occur in the combined domain, and we as airmen -- Shortny Gortney and I -- had to figure out how were we going to fight in an environment where each of us thought well, just by doctrinal definition I'm the predominant player here. But the other predominant player was stacked right on top of me. So we worked out AirSea Battle before there was an AirSea Battle.

The two of us actually came back from the AOR as AFCENT and NAVCENT commanders and briefed the combined Air Force/Navy warfighter talks on what we had been doing over there already and it already sounded like AirSea Battle. I think naturally American warriors will come together and figure that out. What we name it to me is a lesser issue.

**Question:** Aaron Mehta with Defense News.

Sir, you mentioned the JSTARS modernization project and I wanted to get your sense of what you're looking for out of that

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program. And maybe more generally, how does that fit into the modernization/recapitalization priorities you talked about? Obviously there's the big three, the F-35, the bomber, but JSTARS is that right after that in your mind? And I guess maybe just generally, how do you explain those priorities to the Hill and make sure you can actually move forward with those programs?

**General Hostage:** Obviously JSTARS isn't in the top three, or it would be the top four. JSTARS is critically important to me but I'm having to fund it somewhat out of hide. By that what I mean is we're going to take some risk in the near term by taking down a certain number of current JSTARS airplanes and using the O&S from that to provide the funds to get our new JSTARS on the ramp. Consequently, what's critical about this program is speed. I need to put renewed capability on the ramp as soon as possible because I'm accepting risk in the interim. Actually not me, but our combatant commanders who are not happy about it. So we're having to accept risk in the near term in order to produce capability in the far term.

So what I'm telling my industry partners is don't give me new stuff, don't give me stuff that's going to extend the development time lines. Replace what I currently have, do it as quickly as you can, get me capability back on the ramp.

**Question:** Lt Col Travis Norton, USAF, AF Fellow, IDA.

A question, because I loved your comment on the torturous nature of our acquisition process. As an airman I loved that one.

My question is with the day of off the shelf technology, my iPhone's outdated six months after I get it, how do we translate that into specifically that live virtual constructive environment in our training ability to get the leverage, whether that's the gaming industry, and what's your idea to address the challenges with our torturous acquisition process to leverage those capabilities?

**General Hostage:** Tortuous. It means winding and twisted, not torturing. Although torturing is pretty close. [Laughter].

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What I would tell you is industry has figured it out. I mean the computer industry's figured out how to make money in an open system architecture concept. I mean selling apps on common architecture. That's a business model that works.

Way back in my years as a two star at JFCOM J8, joint capability developer, I spoke to the industry then, the computer industry saying we have to figure out how to move away from this proprietary hardware construct where you sell me a piece of equipment that only you can repair and now I'm beholden to you forever but my ability to expand now is driven solely by one team as opposed to an open system architecture construct where you produce the hardware based on a common set of rules, we then publish those rules where others can provide capability that leverages that architecture.

So one of the concepts is the open system architecture. We're trying to push to get there. In the Raptor now we're trying to look at how do we push open system architecture onto that platform. The 4045 in the AWACS is built around an open system architecture. We're starting to see that construct out there. But the fundamental mechanism is already out there in front of us in the commercial industry. I think that's our path. The live virtual constructive arena, that lends itself to an open system. But you have to be careful when you're talking open systems. Not open to the world. It is open to the team that we allow in to work on -- So it's vetted partners that have clearances and have security levels that allow them access to that open system and then build to that architecture.

**Question:** Hon Edward Timperlake, Second Line of Defense.

Going back to the Cold War, Project Checkmate was probably one of the most brilliant visionary things [inaudible]. It was the Cold War go-to organization.

You said something very profound and important, that you don't want to give too much away. Are you satisfied, can you comment on any of the issues you see? The People's Republic of China has established a navy. Is there a feedback loop on recognizing how they enforce their flights, their command and control, their scramble time, stuff like that? Is that coming into our system

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such that the young [fellows] can understand what they're going to be up against?

**General Hostage:** Yes, sir. We have a concept we call the Red Team. We constantly look at what potential adversaries are capable of, what their methodologies are. We look very carefully at what they think of us. We watch how they train, because how they train indicates what they think we're capable of, so we know what they think our strengths and weaknesses are. We think we know what our strengths and weaknesses are. We look for disconnects and discontinuities in that comparison.

Back in the day of Checkmate there was no internet. There was no possibility that all your secrets could disappear just because somebody plugged a thumb drive into your computer. So we're far more circumspect now about talking and writing and publishing and putting out there those kinds of thoughts. You'll have to trust me when I tell you yes, we're very closely attuned to assessing what potential adversaries out there are capable of, where we think they're going, what they're interested in about us is of interest to us.

I've been telling my, we do this concept at Air Combat Command called innovation conferences where we bring the labs in to talk about the leading edge of technology. We bring our industry partners in to listen as the operators articulate the operational challenge, whatever the particular topic of the day is. Labs talk about technologies they're producing that might have impact. The idea is to spark interest on the part of industry partner to grab a lab and say hey, we'd like to partner with you on that technology because we've got some people who understand that technology. We think we could build X, Y or Z in the near term and see if that would solve a problem.

Our industry partners have IRAD money that, that's their life blood. That's how they produce things that will eventually produce profits. It's IRAD that produces the stuff I actually need to go to war. So it's really important to me that we spend the S&T that keeps the labs producing technology, but that industry takes that technology and produces real things with it. So focusing them on that, I do that with the lens of what are

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the adversaries, what are they interested in? Why are they interested in doing that? Or at the very least, am I doing anything to figure out how to defend myself against that if they're going to spend a lot of money?

What I really want to do is make them spend whole bunches of money to defend themselves against something that I don't spend very much on. That cost imposition. I want them to spend a million bucks to defend against my five dollar weapon. I can't afford to be on the opposite side of that.

**Question:** Bill Sweetman, Aviation Week.

It's been about 30 years since Norm Augustine wrote Augustine's laws and predicted that the price of aircraft would just continue to rise. We all paid a lot of attention to that but we don't seem to have done very much about it to stop it happening.

Two questions, how reliant are you on the cost operating and acquisition cost of [inaudible] efforts now being conducted by the F-35 program? To what extent do you need that to reach the acquisition goal of 80 aircraft a year?

The follow-on is how do you drive cost out of your future aircraft and how big of a factor is that in your planning now?

**General Hostage:** I think you came to the wrong forum because I'm not really the acquisition guy. That's not my lane to -- I couldn't tell you how they drive costs. I know that's what they're doing and I know that's critically important to us because the politics of this weapon system are such that ever dollar resonates in the political arena.

I'm very confident that Chris Bogden and the team along with our industry partner building the F-35 are doing everything possible to drive down the cost of that weapon system.

You're exactly right, Mr. Augustine's law appears to be holding forth. What you have to look at though as well is what is the combat capability that comes with that? I spend more for weapons now but the weapon I produce has far more capability than the weapon I paid a lot less for a decade before.

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I'm confident that if we can produce the 1763 F-35s at the cost that the industry and the JPO are forecasting, we'll have a fleet that will defend this country for as far into the '30s as we expect it to, and the challenge will be how do we produce the next capability? Remember, I don't necessarily say it's another fighter. What is the next capability that will supplant that in a cost effective way? Maybe that's how we -- We don't break the law of Mr. Augustine's writing, but we adjust that cost challenge. So maybe it is another platform.

**Question:** Tony Capaccio with Bloomberg News.

I had a question about Iraq right now. The U.S. is flying 50 sorties, ISR sorties a day. That's up from about one a couple of months ago. Can you give a sense of the level of effort both as a former CENTAF commander and now the commander who provides CENTAF the aircraft. Are we talking all unmanned? Or JSTARS, Global Hawk, what's actually flying up there?

**General Hostage:** It's both manned and unmanned. It's what we would call non-traditional ISR. We're using fighter aircraft that have ISR capacity in its targeting pods and things that give us a lot of awareness of what's going on on the ground but are capable of defending themselves.

There's a love affair out there in the non-aviation world with the concept of the unmanned platform, but I really need the human tightly in that loop the way I have in the non-traditional ISR platform, the fighter with the -- So I need both out there.

We're leveraging all of the capabilities we have in the AOR, but it's at a cost. Somebody's not getting that capability when I'm providing it for support to Iraq. Whether it's a tradeoff from the OEF or whether it's tradeoff from another theater, we're no longer a requirements force. You tell me what the requirement is, I build the force. That's the way we were decades ago. We're now a capabilities force. I've got this much capability, you've got this much requirement. You tell me where you want to use it, but when you use this much, we're done. So we're balancing risk in different places to produce what we have to produce.

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**Question:** [Inaudible] the United States or Europe for this effort? Or were they all resident in the CENTCOM AOR?

**General Hostage:** We're using assets that were already there, although we're cycling them out. You can't leave them there forever.

**Question:** Dan Parsons, National Defense Magazine.

The request for proposal for the long range bomber recently went out. What kind of features for this aircraft do you think are most important? And what are the risks for the Air Force if this program doesn't stay on track?

**General Hostage:** The most important feature is the 550 million. And quite honestly, it's been a very interesting process thus far. I think it's produced some tremendous concepts in the different partners that are out there looking at competing. It's constrained thinking in an interesting way.

We talk about family of capabilities with the LRSB. What that means is we're not going to build a platform that has everything on it such that it can go in there alone and unattended. It will be part of a family of capabilities that given a threat environment I will shape the members of the family that have to go in order to produce what I have to produce.

The concept of long range strike I think is one of those critical elements that only come from air power. We have to be able to hold at risk an adversary who thinks he's got sanctuary because of huge geographical space, long distances, and such. We have intercontinental missiles that can do those sorts of things but that takes us into a threshold that is not terribly useful to us from a conventional standpoint. We could built an intercontinental conventional weapon, but once it rolls off the pad nobody would know whether it was conventional or not so it's really not a player in the conventional calculus. So we have to be able to conduct long range strike. Hold at risk, give an adversary pause that there is no sanctuary. That we will come get you if you don't, whatever the political challenge is. We

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have to be able to hold at risk. That's what the LRSB will provide.

Right now we have 21 B-2s. We have an ancient fleet of B-52s. A rapidly aging fleet of B-1s. All of whom are -- other than the B-2s. The B-52s and the B-1s, they're excluded from contested space. From denied space. Contested space they have some capability to deal with and with the right packaging with fifth gen we can get them close, but they can't conduct deep strike in the way that a B-2 can. But the B-2 fleet is just way too small to be our sole capability.

So we need the ability to hold targets at risk. The LRSB is going to be the platform that provides that well into the future. But the key variable in building it is we can't price it to the point where I only have three of them because that's all I could afford. You need to have enough that there's actually a threat that an adversary could be worried about.

**Question:** Amy Butler, Aviation Week.

A follow up to a couple of things you said before and this might [inaudible]. You point out the issue with magazine depth with regard to F-35 and F-22. What if anything is the near term fix for that? We saw activity on JDRADM and then that went away, either went dark or died. Do you plan to do something in the weapons community to fix that problem? Or is LRSB going to be partly a solution to that?

**General Hostage:** We're working on things to deal with the issue. We're limited by physics with the current equipment we have. We've got some brilliant scientists out there that are rewriting physics, so I'm not excluding the possibility that they'll bring me something that I can retrofit into the current fleet. As a matter of fact we're talking about some capabilities that would go onto the legacy fleet to leverage new technology. So it would give us significant changes in the magazine depth. So no, I can't. [Laughter].

Now we get back to that, so we live in a world where when I tell you something, Amy, the next day it's known around the world and there are some very smart people who look at well gee, if

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they're thinking that, what are we doing? And let's go steal what they're doing. So I have to be careful about what we talk about. But we are looking at capabilities -- I recognize the challenge of magazine depth. I've spent a lot of time over the past couple of weeks talking to the different labs that are working on directed energy systems. There are some amazing developments in that arena. Now does that define sixth generation? I don't know. I don't know if we can take something in the lab where it needs to be in enough time for it to be part of that next generation, but I think it holds great promise.

But at the same time I've got adversaries spending orders of magnitude more money on that same technology. So if I don't do anything about leveraging it for myself I better damn well figure out how to defend myself because I know somebody else is going to produce that capability.

So I'm naturally circumspect about telling you a whole lot of detail about what I'm doing, but yes, I'm well aware of the problem and I'm confident we will have the capabilities before somebody else does.

**Question:** General, thanks so much. Ken McCann the ex-dean of the Air Attaché Association. [Laughter].

I just wanted to ask, fiscal austerity clearly is not limited to the U.S.. It's a worldwide issue. What role, if any, do you see with your partners and allies in your [scheme] of maneuver for the future?

**General Hostage:** Absolutely. Thanks. As you know, one of the unique characteristics, well, not unique, but one of the key characteristics of the F-35 is the fact that our key partners are buying F-35s. And again, the magic of the F-35 is not the platform, it is what multiple platforms do, talking to each other, trading information, supporting each other in the things that they do and a UK F-35 doesn't care if it's talking to a U.S.

F-35. They talk brilliantly together.

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So the ability to have partners who have equipment that is absolutely interoperable is key. The fact that we train together at a very high level is key. So it's not just what American air power can produce, it's what allied air power can produce because of the synergistic effects both of the platform and of the warriors that train together.

So we continue as we develop our Red Flags to have our coalition Red Flags. As we develop this LVC one of the things we're looking at is the cross domain capability to plug different security elements together, be able to protect national secrets on both sides, but still have the interoperability in the LVC world. We have to be able to train together if we're going to be able to fight together, so we recognize how critical that is to us.

There are different levels of partners. There's you and me, but then I've got partners around the world that they're friendly with us, but then when something really bad happens, then they want to be a close partner. You can't just wave the magic wand and make somebody an integrated functioning whole. We have to be able to operate with partners that we don't have a lot of experience with. And we have to have systems that integrate and allow us to leverage some of our tremendous capabilities to bring them into the fight and give them some of the awareness and the knowledge that our systems are able to produce.

So we're looking at those again cross domain capabilities that allow us to connect with adequate security to keep the security folks happy but still leverage capabilities together. So it's both technological and training. The training part's the one we've got to be careful because it's real easy to lose that because of the fluctuation of politics of the day. Somebody gets mad and doesn't come to an exercise. That's capability that's lost until the next time we can repair that.

**Question:** Sir, Otto Kreisher with Sea Power Magazine and a few others.

The Air Force in the past talked a lot about making multi-mission C2 flights. Everything that was up there in or near the battle space had to be able to relay, or communications be part

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of the command process. The KC-46, you're trying to keep it within budget. I haven't seen any talk about trying to make that anywhere part of that C2 relay program.

Another one is electronic warfare. The Air Force certainly doesn't have in flight, or en-route jammers. Are you counting on the F-35 to do that mission? Or are you looking at unmanned systems? How are you going to handle the strike package jamming going into contested air space?

**General Hostage:** First questions first. Actually, I better answer the second question because I already forgot the first one.

In terms of EW, again, you have to understand how the stealth element of fifth generation works. With stealth, I've got platforms now that disappear in the noise level. If they're not disappearing in the noise level, then what I really, rather than make them more stealthy, I don't want to raise the noise level. So I'm really kind of happy that there's a fourth gen fleet out there and some of my partners want to bring high powered brute force jammers out there because what they do is drive that noise threshold to a point that my fifth gen stuff disappear, which is great. What I don't want to do is have that high powered brute force jammer flying anywhere close to my stealthy platforms because I just gave up all that stealth. So I'm happy to have them operating out there in the environment, I just don't want to have them too close to me.

One of the capabilities that F-35 will bring is jamming capability. But we do jamming in a different way than brute force. Again, if I've got a tiny little radar cross-section I don't need a huge jamming signal to hide it. I just need a very small and focused capability.

Again, one of the beauties of the F-35 is the synergistic capabilities of a multitude of airplanes, and I'll just leave it at that.

Restate the first question real quick.

**Question:** [Inaudible].

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**General Hostage:** Yeah, relays. In an environment like Afghanistan, putting the robe on the roll on board extender the robe platform is a pallet, a half sized pallet they put on the KC-135s flying out of Manas. That was kind of the R2D2. It would take a cell phone and connect it to a UHF radio. Seamless for the two different operators on either end of that string. But I could do that because I owned the air space, nobody was flying but me and I could put a tanker over hostile territory and make that connection. That's not going to happen in a contested environment. It's sure not going to happen in a denied environment. So counting on an AWACS or a JSTARS or a tanker to provide that node is really not that much of a player in a contested -- They might be on the outer edge of a contested environment but it's only going to propagate the network a certain distance deep into the contested, and surely not into the denied space. So I'm going to need a different way to propagate networks to connect disparate players in that contested denied space. So we're working those capabilities, but it's not going to be on board a tanker.

**Question:** Brian Everstein, Air Force Times.

Earlier you talked about the [obsession] of us to focus on the unmanned part of ISR and how it is important to keep a human in the loop. With that in mind can you go through the reasoning of the Air Force to cut U-2s and keep buying Global Hawks?

**General Hostage:** It really pisses me off when you say the Air Force to cut. I'm only losing the U-2 because I was directed to buy the Global Hawk and the only way I could buy the Global Hawk is to get rid of U-2s. I can't afford both.

We originally asked for the Global Hawk, but funding changed, the COCOM's requirement for high altitude ISR was and the calculus was I've got a U-2 that's already paid for, that already meets the current requirements and that will continue to fly for another 40 years, I can meet the requirement with that and I can save money. We were directed to buy the Global Hawk anyway, but not given money to keep the current fleet going and buy the Global Hawk, so I had no choice but give up the U-2 in order to purchase the Global Hawk. So don't tell me I cut the

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U-2. I didn't. I'm sacrificing the U-2 to pay for something I'm told I have to buy.

A perfect world I would have the U-2 and I would develop the Global Hawk until it's capable of replacing the U-2 and then I would put it in the bone yard where it belongs. But again, the Global Hawk right now doesn't have the same awareness that a U-2 does. The U-2 driver can still look out the window and see something coming and deal with it. The Global Hawk can't do that.

And I get back to my talk about providing that environment in which the human sitting in a box can have the same kinesthetic awareness of the aviator sitting in the platform in the middle of the combat environment. The day will come when I can produce that, and when that day comes I am happy to stop flying manned airplanes. But that day is not here yet so I still need the unique capabilities that the human provides, so I'm going to need manned platforms at least for a while. I don't think we've seen the birth of the last human aviator, but I believe it will happen someday.

**Question:** Lt Col Dave Slaydon, USAF.

I'm one of your 25,000 and I don't take it personally at all. I understand these tough decisions. Honestly, I don't. I've had to counsel people on this and say hey, look, this is not about the person. It's a very impersonal process that looks at records and so on. You will have a career. If it comes down to this, [inaudible]. But that's not what I really wanted to ask you about. What I wanted to let you know is that people [inaudible].

What I wanted to give you an opportunity to talk about was the cyber domain and how you see the Air Force positioning ourselves in that market, if you will, over the next five to twenty years.

**General Hostage:** Thanks, Dave. First let me thank you for your service. When I told those units you had to take a knee, your part of the country dealing with this, them taking a knee, your part of this as being part of that 25,000, so thank you for your service.

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Cyber is -- I talked a little bit about the dash-3 series Red Flag [inaudible]. Space and cyber are so changing the nature of combat as to fundamentally change how we do business. One of the interesting things about computers and -- We talk about cyber now. A decade ago we'd have talked about computers.

I remember when I was the OG at Luke working for General Esmond when he was my wing commander, I had a weapons troop working out on the bomb dump who was really smart on computers. I yanked him out of there. He became my chief computer guy. He built the network for the base. He convinced me hey, you know we really need to run this fiber optic cable around the base. It was expensive and nobody understood what it was, but this guy understood. He's now making a million bucks working for a pharmaceutical firm there in Phoenix. He was a master sergeant without a college degree but he taught himself computers.

That's how we have all developed this cyber capability over the years. It's just kind of grown in and amongst us. So we're all challenged right now. Every service has got cyber capability and its absolutely endemic through our organizations this dependence on cyber, on interconnectedness, the speed of information, all that stuff.

Now we're recognizing its leveraging effect on the different domains that we fight in and the threat that we face based on our dependence on it, it's how do we coalesce that into another domain that we both protect and that we conduct operations in. So Cyber Command's been stood up. Each of the services has a significant, I mean a really significant bill to providing trained warriors to work in that domain. But ultimately I think that's the right answer. We have got to get organizations and structure to how we present forces to the joint force commander, and cyber is going to be one of those forces to be reckoned with.

We're reorganizing within the Air Force, moving AFISRA into Air Combat Command. This is not cyber, because cyber remains in the space domain, but the division between cyber and ISR is really blurry. So there's tremendous synergy between 24<sup>th</sup> Air Force and

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AFISRA today, between 24<sup>th</sup> Air Force and what will be 25<sup>th</sup> Air Force when we stand it up here shortly.

The challenge is we're tremendously dependent on it today. We can't stop riding that bicycle as we're pedaling furiously down the street, but we have to organize ourselves better to figure out how to keep that bicycle working and how to build the next bicycle and how to transition to it when the time comes. So we're struggling to find the right domain.

One of the challenges, we've got to provide 6,000 cyber warriors to the cyber community. That means I've got to have a farm team that produces enough expertise to have 6,000 because they don't want three levels, they want five and seven levels. So I've got to have a big farm team that provides it. So within the 24<sup>th</sup> and 25<sup>th</sup> Air Force mission sets we'll have the farm team that grows those warriors.

I'm confident that as an Air Force we've got a good sight picture on how we connect into that joint arena but that joint arena is still forming itself.

**Question:** Lani Kass, SES. and as you complete your service, thank you so much for your service.

My question has to do with the lower end of the contested spectrum. Not the full up anti-access area denial like we're thinking in China, but more at the level that my former [inaudible] are dealing with right now in a very densely populated urban environment where the potential of shoulder fired and other lower end SAMs. And how do you deal with that?

**General Hostage:** It's interesting, Lani, people think when I talk contested denied space I'm talking about the South China Sea and [inaudible], but honest to God, there are dozens of very significant anti-access potential arenas around the world. And with the proliferation of relatively capable, not just shoulder fired but small mobile capabilities, so contested space is changing.

People lambast me all the time, how can you give up the A-10? It's built for those kind of environments. Well, it was built

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for the Fulda Gap in 1980. I could not send an A-10 into Syria right now. They'd never come back. I would have to conduct three weeks of very significant IADS degradation before I could think about sending a fourth gen platform and I sure as heck wouldn't end an A-10 in because the rate of fire that would come in at low altitude would be unsustainable.

I believe, again, given our ability to link in a non-contested environment, an environment where I can provide air superiority, now what I can do is put volume over the battlefield. We have the capability using a range of platforms to provide support for warriors on the ground.

My favorite example is the B-1. Who in the world would have ever thought that a Cold War penetrating bomber would be an effective CAS platform? It's actually one of the most effective in the fight in Afghanistan right now. 18,000 pounds of ordnance, a sniper pod so it's got as clear a picture as anybody does of what's going on, two people in the back looking at 24 inch LCD screens as opposed to the fighter pilot looking at a single 6 inch screen while she dodges and ducks bullets and rocks and clouds. And it's got enough fuel that it's got eight hours of endurance. It can transit Afghanistan just as quickly as an F-16. The difference is when the two of them race to the other side of Afghanistan the Viper goes to a tanker. The B-1 still has three hours of hang time before it has to go to a tanker. So very tremendous from an effectiveness standpoint.

So I believe, and I know because we have studied it, that the platforms that we have today, the multi-purpose platforms that we have today, the ones we're procuring can provide that same capability in the non-challenged environment. The difference is they also have to be able to provide capability in the challenged environment.

That's why you hear us talk so much about the A2AD environment because we know we can reach back to the least challenging environment and still provide that integrated effective capability that we provide today.

There's a lot of concern that you're getting rid of the A-10, you're backing away from the close air support mission. That's

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absolutely not the case. We have developed an exquisite ability to put precise air power -- It's seven minutes from when bullets fly across a soldier's head in Afghanistan to when we have somebody overhead providing capability. That ability to do that is not going away. We are cementing that into our structure as part of our battlefield airmen.

I'm not going to have the capacity I've had over the past ten years. I can't afford to sustain it given the way the rest of the force is shrinking the way it is. I'm going to have to have a proportional amount, but I'll have the capability to do it, and as we've done through decades before, if we've got to ramp up for a larger scale, we'll bring the rest of the air power in and shape it to apply it to that problem set. But it's having the expertise and having the nucleus of the structure to do it. That's my commitment to my ground partners and to all those nay sayers out there who say I'm giving up on CAS by giving up on the A-10s.

Let me just say thanks. I know that you all are sitting here because you're interested in air power. Whether it's because of prior service or many years of working in this business, you understand air power and the value of it, so I appreciate your time and interest and all you do to keep air power in the front of people's minds.

I would just leave you with a little word. I'm absolutely confident, as I said, I've got -- When I was young I thought I can worry about the problems of today, they'll be somebody else's problems some other day. You get to this point when you've got kids and you've got grandkids and you go oh, shoot, I still worry about it because the future's important to me now because I've got grandkids that are going to live in the future and I want them to have what I have.

I love to tell the young airmen out there that 99.9 percent of Americans do nothing to earn the freedom they enjoy every day. It's one of the beauties of our society. The fact of the matter is that one-tenth of one percent puts on a uniform and defends freedom every day and that's why we live in the society we do. Because for generations before us there were people threatened by the freedom that we live with and desperate to keep their

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populace from saying hey, we want what they've got, so they've challenged us. And the reason we're all sitting here today is because before us people like Tom Hudner and others put on a uniform, fought and died and protected that freedom. And we're all sitting here today because young men and women continue to put on that uniform and are willing to fight and die to protect that freedom for us. That's why my grandkids I'm confident will have that ability.

So thank you all for your participation in that effort. I think air power is one of the things that will keep our nation safe.

Thanks.