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Media Roundtable

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Lt. Gen. Kwast: Thank you. Really, the subject matter experts are sitting by my side here, so I'll try to be brief and let them fill in as required. But we're here to help you tell the story that is pretty exciting.

That is, as we are migrating as a civilization from an industrial age to a digital age, our job at teaching the force to be effective at defending America is really exciting. Because there are so many new technologies that are out there right now, and there is so much knowledge about how the human brain learns, that the coin of the realm is, if we can learn faster with more innovation than any competition out there, we have a fighting chance of staying perpetually ahead of any potential competition or adversary that may emerge in the strategic environment. Ultimately, civilizations that thrive and survive are civilizations that learn faster and with more humility, meaning they're willing to change in order to find effective ways of protecting their values. And that's the journey we're on.

So I start at that grand level, because that's really at the core of why we are being so aggressive at finding new techniques, new technologies and new processes of teaching the force to be lethal more rapidly, at more affordable price points than our competition.

So we'll stop there and let you ask questions. And we can go anywhere you want, so it doesn't have to be on that thematic, but that really frames what we're doing and why we're doing it.

Media: [Inaudible], Federal News Radio. The Defense Department [inaudible] policy. You're tasked with building your force over the next couple of years. How are you planning on doing that when retention levels have been low, when recruiting levels may be not the best in the past couple of years. What do you kind of see for the future?

Lt. Gen. Kwast: For the Air Force, it's a good news story because we meet our recruiting numbers every single time because we're a great force. People love the Air Force and they love to

serve in the Air Force because we treat our people well. The other services do as well, but the Air Force takes special pride. One of our values is we take care of our families, we take care of our airmen, and I think that is one reason why we make our recruiting numbers.

But I will tell you, part of this business is about the art of not only telling the American people who we are, what values we stand for, and paint the picture so they can see themselves in us so that those who want to serve are coming forward. But also, measuring the talent that they have. matching it with their passion that they want to do, and marrying it up with a requirement in the Air Force. And if we do that well, then I have no worries about all the other policies that may change well above me.

For example, the deployable factor. If we have a nice network model of being able to have insight into the talent in civil society, we can find people that have the fitness to be able to deploy and the talent to do the jobs that need to be done. It doesn't have to be one or the other. It can be both. But only if we have a deep enough pool of people we can reach, and a deep enough pool of people we can measure the talent and then marry it up with our needs.

Media: Can you estimate at this point how many people you may lose because of the [inaudible]?

Lt. Gen. Kwast: Again, we don't, because we haven't done the analysis of that. But we also have a deployability requirement. We make exceptions for certain skill sets that do not need to deploy, and we would have to go through all of that data to be able to give you a number on that. But the reality is, fitness and the ability to deploy are a key priority for the Air Force. But we also make exceptions when, let's say we have a scientist in a lab that needs to be there for ten years. We can make exceptions, and we do. So we try to make not one size fits all, but rather have a more nuanced approach to talent management where you don't need to. But if we need to, we can still find the talent. There's no problem with that. Because it's cultural. If you have a culture of people who know that being fit to deploy is part of the requirement, you can sustain that. There's enough people, there's 330 million people in America. We can find them.

Media: [Inaudible]?

Lt. Gen. Kwast: Right, so as we are doing that, we are still in the space where we do not want to jump to conclusions, but we're finding some things that indicate that there are some pieces and parts of that whole system, that whole OBOG system that may need to be maintained a little bit more often or replaced a little bit more often. And as we're looking at what that's going to be, you know, which parts need to be replaced more often and what maintenance do we need to do on the system to maintain it with the great track record it's had in the past where we have 2.1 million hours of good use out of that OBOG system, as we are discovering that, we are going to get back to fly by trying to be able to turn the system off and breathe the clean air that is in the cockpit.

Just like a person who goes up in a Cessna 152, they're breathing the ambient air. So too, we can do that. We've been measuring the air. NASA and others have been measuring the air to make sure that it's safe. And it is showing to be safe and clean and good air. And that's a way of still being able to operate by breathing the air in the cockpit that's clean, and then allowing the scientists and engineers to have the time to really get after that whole OBOG system and find some root causes and figure out how we maintain it in a way that gets back to the performance that we're used to, 2.1 million hours' worth of clean flying.

Media: So [inaudible]?

Lt. Gen. Kwast: Again, that would be jumping to conclusions. We don't know yet. And that's really the bottom line, we don't know yet. We have indicators, but to jump to that conclusion would be to not allow the scientists and engineers the time to really test things properly. But we have gone in and we have done some testing on certain components and we've found some of them that are failing more often than they should, and that's an indication that there are some issues there. But again, we don't want to jump to conclusions at this juncture. It's still too soon. But I think we have a path to get back to flying safely and still producing pilots while the brilliant scientists and engineers of our Air Force and NASA figure out a way ahead.

Media: Can I just shift that over, in the 35 [novel], and you've had some apparent hypoxia episodes in the Navy. The Navy has got a whole lot more, I mean is this because of the improved briefing of pilots as to causes, do you think? I mean is this partly you're looking for it so you're detecting more? Or is it impossible to generalize across the platform?

Lt. Gen. Kwast: Yeah, and I'll let Moon talk to this one, but I would say it's impossible to generalize across them because each one is uniquely different. They are totally different animals. And that's why. It would be nice to be able to say there's a common theme here, and as they do more analysis they might find certain areas that are common, but they are significantly different systems.

Maj. Gen. Doherty: That's exactly right. We find ourselves in a discovery region with all these platforms, where each one has little subtle different characteristics on a path on how we're getting to these unexplained physiological events.

The T-6 events, as I've reached out to the Navy and the NASA experts and learned from their recent history, they seem to be close cousins with the T-45, but they're different than the F-18 which is different than the F-35 and the F-15 and the F-22. But I know that there's larger efforts DoD-wide that look at the long-range efforts of designs, what's going on with the science, and --

Media: Who's doing that?

Maj. Gen. Doherty: I think it's at higher levels of the government, taking a look comprehensively at the human-science interaction so that we discover more.

Lt. Gen. Kwast: At the DoD level, really looking at how do we deliver oxygen to the human being in a way that's repeatable, quality, and reliable.

Media: John Tirpak, Air Force Magazine. The T-6, or TX award is not too late, it's only a couple of months [due to the CR]. Inevitably there are protests and things can drag on for months if not years. At what point do you have to make some decisions about further extending T-38 if TX is to be delayed for six months to a year?

Lt. Gen. Kwast: That's a great question. The answer is, like everything else, it's incremental. As we deal with the reality of how long this gets delayed, we make incremental decisions on how we can mitigate the fact that it's being delivered later than we expected, and that includes many different elements of how you manage risk.

Doing an extension of the T-38 is one method. But we're trying not to put all our eggs in one basket, and we're trying to look

at other methods, techniques for teaching, training and learning to help us mitigate whatever reality the process brings us.

Media: Can you elaborate on that?

Lt. Gen. Kwast: Yes. For example, right now we predicate a T-38 life based on how often we fly them. The [inaudible] is what we call it. But if you could find other ways of producing the same quality of pilot by maybe flying a few less sorties, because you maybe use augmented or virtual reality to give them more cognitive reps in some of the things they need to do to be good intellectually at flying this aircraft, maybe you could extend the life of the T-38 without having to spend a lot of money. So that's an example, for example, of how by doing it maybe differently you still have the same quality outcome but you aren't trapped in the assumption that we're going to fly it at the same rate we always have flown it. Maybe you can modify it a little bit. Maybe if you couple that with other techniques you can still survive.

So that's why I say it's incremental, where we see how long it's delayed, and the longer it gets delayed the more aggressive we need to be. But in the early days we can nibble around the edges and incrementally look for ways of taking some risk to achieve the same outcome with the money we're given.

Media: Can I follow up on that just very quickly?

The Air Force in its modernization program, the [inaudible] chart, as you know. There's a window that you have to get the TX done and if it's delayed at certain points then [sand] piles up in particular places.

Lt. Gen. Kwast: It does.

Media: When do you have to get it done for --

Lt. Gen. Kwast: The reason that's an impossible question to answer is because of innovation that's coming on our shores even right now. And because that's assuming the game will not change. That's assuming all the assumptions that are true today will be true when that [sand] chart is built up. And I've learned in my life that if I accept that as fait accompli, I would never win any fight in my life because the [sands] change. As the enemy changes the [sand], it's true in this business too. What I'm doing is I'm planting seeds of innovation that get after the root cause of why the [sand] will be unaffordable at a certain point

in time, and if this is not delivered in time, I'm going to harvest some of those innovations. I will probably be able to harvest them no matter when the TX comes on-line, and it will make the TX even that much more powerful at delivering more pilots, more cheaply, with better capability than ever before.

So this is an iterative game of strategy, of innovation, and of business case analysis of money and outcomes that is complex. When you change one thing it changes everything else, and that's why it's a journey, and it's incremental and there's no date certain that I could give you with any clarity to say if we don't get it by this date, I have to do that.

Media: In terms of the T-6, are you able to say what components of the OBOG continues it and how it [avoids] problems, and what role is industry playing in trying to help you resolve this?

Lt. Gen. Kwast: It's too early to give you specific parts. I will tell you that we've seen some failures with the shutoff valve. We've seen some issues with the plenum or the reservoir. But again, it's too early to say that those are root cause or that they, and what we would do about them. And industry is playing. They are in with both feet and helping us. So it's a real good news story of the collaboration that's going on, both with Air Force Materiel Command, our acquisition community, the vendors that make this, and the scientists and engineers from NASA and the Air Force and DoD that are helping us.

Media: So last year General Roberson [inaudible] of the RPA program and [inaudible]. And [inaudible] had a lot [inaudible] more jobs in the RPA career field than any other [inaudible] pilots [inaudible]. And [inaudible] increasing the enlisted side for that [inaudible].

Can you give us an update on where the RPA training overall is, and if there are so many opportunities in RPA as an enterprise, in this career field, how is there really a shortage of RPA pilots?

Lt. Gen. Kwast: The first portion of that question is the fact that it is a reality that the RPA architecture requires much more manpower than let's say an F-16 squadron. A manned aircraft, about 1.5 to 1 ratio of people to aircraft to operate the thing. With RPAs, it started out about 13 to 1. It took 13 people for one aircraft, and we've gotten it down to about 10 to 1, but it's still in the design phase, it is manpower intensive in a big way.

And of course it's very vulnerable. It's vulnerable to satellite com. It's vulnerable to kinetic problems where it's deployed to.

So we live with that reality, and that reality is what precipitated his comment to say we have more people doing this RPA business in the aviation of RPA than we do in any of the other business lines of aviation.

It doesn't mean we have to live with that. We have to change that because it's too expensive in manpower.

It was a solution back in, when we were in the throes of Afghanistan and Iraq, for Iraq primarily. It was a solution that fit the need of the day. But it was designed in a way that took a lot of manpower, and we have to get out of that.

Because in the business of defense, it's about money. It's about cost. I have to be able to project power at a cheaper price point than my adversary or I'll be outspent. Now when we have such a unilaterally dominant economy, sometimes you can afford to be a little inefficient, but efficiency is as important as effectiveness when it comes to the long-term money game and economics of power projection.

So this gets to your second question. If you have this many people, why is there an issue? We're going to change the game. We are going to build, the outcomes of that RPA is to give us situational awareness and to do things that we cannot otherwise do. I am working with the whole of the Air Force to build a strategy and an architecture that gives us more ISR for less people, less money. More situational awareness to be able to do more things with fewer people, less money, more efficiently, on a global level. So as we are on that journey, it will change all the predicates of those statements. We don't have to live with the fact that it will be the most manpower of all the enterprises, and we will move to a place where we can do this job with fewer people.

Media: Through automation?

Lt. Gen. Kwast: No. It's a whole series, and we could go into all of them. It's the way you do it. It's using some automation, but again, that's a long answer, but you had your hand up first, we'll go there. We can come back to this one if you want to go through all the details. But there's about six pages worth of things you can do because the solution is not just one thing. It's a network, and that network has many nodes.

Media: [Inaudible] with National Defense Magazine. You mentioned [inaudible]. Do you have any concrete plans to incorporate that [new] technology as [inaudible] moves forward? Or is it immature?

Lt. Gen. Kwast: Where we are at right now is that we have a team up in Austin, Texas working with some of the best companies, leading edge companies in not only virtual and augmented reality, but also artificial intelligence and supercomputing. The merging of all those disciplines. In order to explore what it is about the human brain that makes you good at this business of military aviation. Where it's a competitive environment and you're trying to accomplish a mission against another human being or another machine that's trying to stop you from doing your mission.

And when we find the data that really tells us what makes us good at this and what makes us not good, then we will know how much virtual and augmented reality might play in future techniques for not only teaching people how to be good at this business, but accentuating their effectiveness at doing the job.

So it's still in the nascent stages, but we have gotten aggressive about really tinkering with these new technologies that have changed so foundationally even in the last two years. The amount of granularity I can get on a [hala] lens, for example, at very cheap price points, tapped into a data pool of big data that can do some amazing things. It's so fundamentally different than it was even two years ago, that we're exploring what that means for the human brain at learning and experiencing things that make them better at doing their job for cheaper price points.

Media: [Inaudible]. Are there any discussions or thoughts about how some of the [inaudible]?

Lt. Gen. Kwast: The feathering of a simulator into a virtual environment, the feathering over time that might happen can only happen responsibly when we really understand what it can do for us and how it can do it and its price points.

So once we have that insight on what can virtual and augmented reality coupled with artificial intelligence and supercomputing, what can it do for the human brain to learn? And what are the costs? Once we have those facts, then we can start designing a strategy that says okay, here' show we can now feather away from a more expensive model, maybe a simulator that has hydraulics

that's moving you around and trying to create the environment but is anchored to one spot versus a [hala] lens I can take to my dorm room and practice at night if I want to. We'll discover the facts that allow us the strategy forward that's cost-effective, and more importantly, though, it keeps the quality of that operator as high as possible.

Media: It sounds like there are one or two things that you've seen that have gotten you really [inaudible] about this. Can you tell us what they are?

Lt. Gen. Kwast: Yeah. One of them that some of you may have heard before, one of them, as we're measuring how the human brain learns, we're finding that the human animal learns pretty quickly the visceral things. For example, the act of getting in a jet and starting it up. If I do that a couple of times, the human animal is pretty good at that and it doesn't have to do it 100 times to be good at it. It can do it three times.

But the cognitive reps, the place where you're fusing information together in a complex environment against another human being that's trying to kill you. That takes a little more practice. And if we can start breaking those up and we can give more cognitive reps to a pilot, for example, where it's difficult to do, and we can give fewer reps in the visceral, maybe we can find some efficiencies. So that's a pretty exciting fact that we're stumbling upon. But it's too early to tell. Again, it would be jumping to conclusions to say that's a fait accompli. Because we're going to let the proof be in the pudding. But the first test is already in. The first beta tests are there. We may have some more insights in August.

Brig. Gen. Sears: I think one thing, your question was very TX-focused, and you two over here asked about the TX and it being a little further out. Was that you, John? I think it's important to know that there's agility within the training system with what General Doherty's doing and what we're doing in AETC, that we're not waiting for the TX to incorporate this. The continuum of learning in force development that we're instituting is going to allow us to be able to bring the tinkering into the system as it allows us to make the training better, faster, and cheaper for what we do.

Lt. Gen. Kwast: And it applies to more than just flying. Talk about maintenance. I can teach a maintainer to change that tire now without having to actually have the physical aircraft there. And I can have an artificial intelligence coach that's showing

him or her where the bolt is, how many pounds of torque you need on that, here's the technique that works. Do that one first, and then this one or you could strip the threads. Things like that.

Media: [Inaudible]. [Affordability] [inaudible]. There's been a few things [inaudible] looking at [inaudible] that have a different mix of people [inaudible]. [Inaudible]. It had [inaudible]. Are you thinking [inaudible]?

Lt. Gen. Kwast: We are, but we're starting at the foundation, and that is talent. And then the second layer of that is finding the talent out there, but then bringing that talent into a culture of values that make them a lethal warfighter. This is, again, a civilian pilot is very different than military pilot because a civilian pilot just gets good at going from Point A to Point B. A military pilot is worried about fighting their way to Point A from Point B, or vice versa in the face of another human being or another system that's trying to stop them.

So getting the talent from civil society, inculturating them into a value system that thinks about competitive advantage, since that's what the taxpayers pay us to do that's unique and the only reason we have purpose in life, is the key. And if we can do that by tapping into civilians and others, great. It's about talent and it's about culture.

Media: Do you [inaudible] now? Is there a time line that you're looking at for [inaudible]?

Brig. Gen. Sears: Rachel, I'll give you an example. It's something we're going to do with college graduates coming out in May. I think we've even selected the ten. If we haven't selected them, we're in the process of doing that. We're going to take the college graduates that have part 141 FAA approved and university flying degrees from aviation science programs, and instead of doing phase one and two of pilot training, we're going to put them straight into phase three in pilot training in the T-1, which means their pilot training experience will be six months now as opposed to 13 months. And we've got, the same thing General Kwast has been saying, we will take the data from that and analyze it to see did we successfully get a military aviator out of the T-1 program to go onto a 17 or a KC-135 or something in the mobility forces out there. That's just one thing we're doing as we approach exactly what General Kwast is saying, taking the talent from society and bringing them into the difference of military aviation.

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Media: That would be for mobility flights?

Brig. Gen. Sears: Yes.

Lt. Gen. Kwast: Although it may expand, depending on --

Media: How are you going to reduce the manning and the money needed to fly all these RPAs [inaudible]?

Lt. Gen. Kwast: Again, we can't even really start talking about a strategy until we know the element that makes this effective. We can guess at strategies. But that's the million-dollar question right there.

What technologies of our age, meaning the technologies of the last number of years. What technologies and techniques, and what knowledge about how we know the human brain learns, and how it interfaces with machines. How can we take these insights and build a strategy to wean ourselves from this massive manpower intensive architecture we're in? As the data pours in, we're going to start building those strategies. So ask me the next time we meet and maybe I'll have some more insights for you. But that's trying to get after the root cause of the problem. We've been chasing it for years, and we finally have to get after the root cause.

Media: [Inaudible]?

Lt. Gen. Kwast: I'll let Moon talk to that, but it's an impact. When we stop producing, we stop producing. But we are, again, mitigating it.

Maj. Gen. Doherty: It is certainly our primary work horse of our pipeline for pilot production to the tune of about 700 sorties a day when all of our bases are flying. So that adds up.

But what we did was we used some of the boss' innovative ideas in enabling and pushing down decision authorities down to squadron and wing level, and identifying the folks that were just right there, just about ready to finish up T-6, and reevaluating those folks on whether they were ready to go to T-38. So individually, they went through every one of their records and decided yep, they're ready to push on. Then we're doing the same type of thing. Obviously, we've canceled a good portion of the last class that was going to enter.

I think the primary interest and concerns of all the senior leaders of the Air Force, to include General Kwast and myself, is the priority of our people and our air crews and make sure they have a safe flying environment. That's what's driving it. We're not worried about time lines. We're not worried about a log jam of pilot candidates that are stacking up. We're worried about taking care of our primary number one weapon system, is our people. Making sure they have a safe flying environment and doing it wisely and smartly, and not being driven off of dates on a calendar. And that's what we're going through right now. Methodically working through some newly created TCTOs to robustly and intrusively look at the OBOG eco system to make sure it's performing at the level we expect it to perform, and then proceed forward.

Lt. Gen. Kwast: I just want to acknowledge the gratitude of the role you play in telling the story, and thank you for being the people that shine a light on every part and piece of our country so that everybody lives their life above reproach, that we're doing the right thing, that we have many people looking at every problem from every angle. It's that kind of diversity of thinking, diversity of thought, that makes us a better people. It's what makes our country great. I just want to acknowledge and thank you for being those people.

Media: Can you tell the White House that? [Laughter].

Lt. Gen. Kwast: Thank you all very much.

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