

Virtual CRT Breaking China

[Riki Ellison]

Howdy and good afternoon from a wide-open space in probably one of the prettiest parts of our country. I'm in a cowboy ranch I grew up in here in Rimrock, Arizona. It's where you dream big, you be big. It's the American dream that we all, all of us, dream.

I'm Riki Ellison. I'm the chairman and founder of the Missile Defense Advocacy Alliance. We have been involved with Missile Defense for 40 years plus. We created MDAA 20 plus years ago. We are completely engaged with advocating and getting and doing everything we can as an organization to make our troops and our allies safe with missile defense, drone defense capabilities today. Our mission is making the world and our nation safer by the development and deployment of missile defense. And there's, it's just unbelievable the amount of desire, demand, demand, demand for this capabilities. And we've got to get much better at getting those to our war fighters around the world for this.

This is our 97th virtual that we've done. This is Breaking China. And we're looking at this in numerous ways here, but obviously breaking China on a threat basis, on a movement that we're seeing from them aggressively over the last 10 to 20 years, and their movement to change the world order. So this is, missile defense is part of that ability to break that and continue to keep the United States as the world leader.

This also is a discussion about breaking China, like a bull in a China store. We've been inundated with old China, our ability to change culture. We have to break China to change culture. And we're seeing that. You've seen some of that that happened yesterday with the Secretary of the War as a result.

And the third thing is really detailing into base defense, base defense, the simplicity of that requirement, but the complexity of how to get that done. We still haven't gotten that done. And that is a critical gap that has been exposed for our nation and for the world, but certainly our nation. And that's that counter-UAS Shahed gap that we are challenged to do. And when you look at China, and you look at where they're going with automation and with hundreds of thousands of drone warfare, that's going to happen. That's going to happen here. That we can no longer stay in how we're doing this. And that autonomous command is something really real here for us to change and get into this fight, not get into the fight, but win the fight.

So these are some of the things we're going to discuss today. We got to start off in the Pacific. We got to start off with what we as a nation have been doing to develop defensive capabilities against China in the Pacific, and then be able to take that, obviously, to where it needs to go over in the Strait of Hormuz and Red Sea, etc., to do that.

So we've got some great speakers today. Really honored to have both our board members here. Ty Thomas from DCOM PACAF, and Shotgun Browning, our rookie. He's a rookie with us from R&E and his aspect of it.

But I'd like to start it off with Ty introducing some of the ways we are breaking China with our programming and things that we've been doing recently. So Ty, it's all yours.

[Lt. Gen. (Ret.) Jon Thomas]

Okay, thanks, Riki. And Shotgun, welcome to MDAA. Ricky calls a rookie. I'd say that only applies in the sense of being a board member. I think you're pretty veteran in all kinds of other things. So we're really glad to have you.

So yeah, so Riki's being clever with words a little bit on, you know, breaking China on this one. I think it is pretty clever. There's a lot of different ways to break China. You mentioned, like, you know, bulls in China shops. You could also unleash a former NFL linebacker into a China shop. And I think you'd have the same effect. There'd be some broken China.

But the way that I'll address it is from the almost, not quite the literal sense, but pretty close. Like, China is also in this conversation, we're talking about the People's Republic of China, mainland China. And breaking China in that construct, I would say, you know, a long standing, you know, set of goals for us is first just deter them. Okay, so you can break China by simply deterring them, making it so that every single day is not the day they choose to pick a fight. But if they do pick a fight, then breaking China is countering them and defeating them and prevailing in such a conflict.

So how do you do that? There's a lot of different ways. There's high end stuff, there's low end stuff, there's daily competition. But what I want to talk about is actually a program that MDAA has started with the University of Hawaii Mānoa called Artemis. And so first of all, especially in light of current events, this is not the Artemis that's on its way to the moon right now. So this is started before, you know, that, that space vehicle in that mission was launched. But so this Artemis, the acronym stands for Advanced Reconnaissance and Tracking for Environmental Monitoring and Indo-Pacific Security. So that's the name of the program. And the words that you heard in there are reflective of the fact that this is a partnership between MDAA and the University of Hawaii Mānoa.

And maybe the first thing you might have caught is like environmental monitoring, what does that have to do with breaking China? Which is a great question, except that if you spend the time and think about it, anything that's probably really good at environmental monitoring might have some interesting applications for the commander in the Indo-Pacific Command and the components and to the discussion about, you know, breaking China.

The other thing and particularly important is realizing that and one of the reasons why MDAA, besides the fact that UH Mānoa is obviously there at a key point in the Indo-Pacific AOR, and we're all four components are there with the combatant command headquarters, is that they're actually really, really good at environmental science and space science. And they have some pretty significant capabilities. And so we as a nation should be thinking about how is it that we are best utilizing the skills, the talents, the capabilities that exist in our academic research institutions. Some places we do that really well, and other places we don't do enough.

And I don't think we're tapping enough at UH Mānoa, but the Artemis program is helping do that.

So what else about the Artemis program? Similar to a program that we started with SHIELD that's still running and it's been going for five years, this was the first year for Artemis. And we have a cohort of about 10 students, but they're slightly different group size. And they're usually in the like 04 to 05 category. All of them are resident on the island of Hawaii. And that included, though, some foreign participants from Australia who were assigned to the 94th AAMDC there on Joint Base Pearl Harbor, Hickam. But anyhow, this group came together and they selected Capstones similar to what we have in other programs. And their topics were, from the very beginning, they decided there were going to be three specific criteria that they wanted these Capstones to match to.

So the first one was that the data, and this particularly driven by the Australian students, but all the others understood it, that the data started, whatever was collected, they have to make it no classified data. Different than unclassified, which is a classification in of itself. No class, meaning that it starts, it's born with no classification, so that it can be accessible and used by all allies and partners that could benefit from it to contribute to whatever the mission is. In this case, the mission would be breaking China.

Second, that the solutions are low cost, so that they can be done without a gigantic, you know, funding battle or all the things that come with that.

And then the third was that they could be fielded quickly.

Those were the three criteria that they went in. And then I'll describe the three programs because I think you'll find them all very fascinating.

So the first one is called APEX. I won't drag you through all these acronyms for the names of them, but the first thing that I would ask you to think about is, and many of the audience here are familiar with Sky Fortress, okay, that is the incredibly innovative, incredibly successful acoustic sensing network that the Ukrainians put together and now is being put to work by NATO in the form of the European EFDL.

So if you take that idea and you go, well, how would you apply it to the Western Pacific? You immediately run into the terrain is different. It's a land and maritime dominated theater. Well, what these students did is they leveraged some previous work that was already done on a project called Lily Pads, which is basically put the sensors on some kind of maritime platform. They have two instances of how that would happen. And then also you could put it in the air. What these acoustic sensors do, they're very simple, very low cost, same set of principles that the Ukrainians use. And so the concept is as you get a network of those sensors out there, they collect in the whatever acoustic spectrum that you're looking for. And then based on the triangulation and a little bit of data manipulation, you can figure out what it is that you're hearing and what it is that you're hearing. You can develop at least a cue to some other sensor that might pick it up even better.

Notably, while the Ukrainians and EFDL is really probably looking at subsonic acoustic signatures, the Shaheds, Gerans, things like that, what they chose to go after was a pretty vexing problem that we've got and MDAA has been dealing with this, which is hypersonic. Anything that's traveling in hypersonic. And what they did, working with the University of Hawaii has found that anything that's traveling at hypersonic speeds has a unique acoustic

signature. They call it an N-wave. And so if you tune your sensor to be able to pick up that N-wave, guess what? You're going to pick up a hypersonic object.

Now, this isn't going to give us targeting or tracking solutions, but what they developed is a concept towards being able to have a very low cost, very ubiquitous sensor network in the Western Pacific that could then contribute to. And oh, by the way, because this technology is very simple and can be put on a Philippine fishing boat and the technology is so easy, those Philippine fishermen can put it together. We just give them the components. So they're floating out there and they're listening. And you put it on buoys and those buoys are floating out there. You put it on high altitude balloons and that's out there listening and all of this is contributing.

And so they've gotten support, just recently briefed the INDOPACOM J5 team and that it's very likely that we'll be demonstrating this capability in the next 12 months and hopefully have a first instantiation fielded in about 24 months. An incredible application of a proven technology to a different theater against a different problem set. And it won't be only for hypersonics. If they want to tune the sensor to be able to pick up some other acoustic signal, they certainly can do that. But it's a very innovative way of going after hypersonics. So that's APEX.

The second one is one called Makahiki. What they've done in this one is they've taken the combination of the simplicity of a CubeSat, pretty advanced technology in sensing and in several particular instances that the University of Hawaii has developed, and then some technology associated with bringing satellites in orbit. What do I mean by that?

So wouldn't it be nice to be able to have a relatively low cost and fairly ubiquitous presence, a hyperspectral imager, a SAR sensor, RF passive collection sensing, and also LiDAR. If you take the combination of those, first of all, they're fantastic environmental monitoring, but just let the imagination be your guide as to what else it might be for the military men and women out there. But instead of sticking it all on one aircraft or one spacecraft, they're distributing amongst four different CubeSats. And then there's a fifth one, which assists with the communication and the download of the data that's collected. And all of this is commercially available or available through an academic institution type technology. None of this stuff is bottled up in some classified lab somewhere behind a green door. And so basically these five CubeSats go up together, and then they're through their algorithm that they developed at the University of Manoa, they maneuver on orbit.

So you can change the configuration, they stay close enough together, but basically you've got this fairly resilient in the sense of if you want to do something about it, other than, I mean, there's all kinds of threats you could do to this, but if you want to take something out of orbit, you got to get like all five of them. So this Makahiki program has been very interesting, obviously more expensive than the APEX, the application about the acoustic sensing, but they think that they can get that first instantiation up into orbit for less than \$20 million. So there's some interest in that, and we'll see how far this one goes, but the student cohort did a great job with that.

So the last of the projects is called ARGUS, and it may answer maybe a question that's forming in the mind of the audience out there, but okay, great. So you collected this data with acoustic sensors, you collected this data with on-orbit sensors, that all of it is no-class

data because it didn't start with any classified program. How are you going to get it out to people? That's what this ARGUS project is about. And so the principles behind ARGUS are that if you want to contribute, this is like allies and partners in the theater, sensed data in any form, we have examples of things that are in APEX and ARGUS, you can also gather out of the data that's been collected, the no-class data.

So think if you're, I don't know, Indonesia or something like that, and you have some capability to sense AIS, or you have air traffic control radars that are also showing an air picture, or you have other, maybe you're buying some commercial data and your agreement with the commercial provider is that you can use that data and share it with others. Well, okay, so you make all of that available into this ARGUS cloud that the team has proposed in their capstone, and then with everybody else that's putting stuff in to include things like APEX and Makahiki data from the projects I just described, it now becomes available. And if you contributed, you can pull it back out.

The classification part only depends then on what somebody does with the data. Okay, so fine, somebody takes it out and they correlate with this, correlate with that, they put it into their US system or Australia system or whatever. Sure, it needs to be classified at that point. But at the very core, what you're doing is creating a data lake essentially of what could be very valuable sensing information that you've gotten at relatively low cost that was already being collected elsewhere across the theater, and you just put it in a format that it's accessible to others.

That's kind of the magic that these guys are pulling together with the ARGUS, and that should be something that should be able to be done at relatively low cost, maintained on a commercial cloud, and then sustained through some kind of partnership amongst all the nations that are going to contribute and draw from it.

So, you know, Riki, that's kind of just kind of leave that summary there. But this is the first year of ARGUS. I'm sorry, not ARGUS. I mean, first year of Artemis itself. And the momentum that this cohort of 10 students has already built up is pretty fantastic. The reception that they've been getting from the audiences where they brief these projects has been really, really receptive, and it's exciting. It's exciting to be able to see these get going and fielding, and then also to get going on the second cohort. So I'll pause there, Riki, and turn it back to you.

[Riki Ellison]

Well, Ty, you've been a leader for this whole operation that we created all the way from SHIELD to where we're at today with this. And some of that drive, or most of that drive has come because we haven't been able to get stuff to our warfighter, the right stuff, as fast as possible.

Can you look at this and take it, because I think the Pacific and breaking China is dependent on our ability to defend bases throughout the Pacific and with our allies. And how that is a hard thing, as you said in the beginning, with water as a domain and spaces, but not land. And we seem to be really challenged defending bases.

And I want to ask you, what's the problem here? Each of these services, what's the problem? That we can't do this, and how can we do this better? We're looking at, I know that we got a problem. You need to expand on that, because we got to defend our bases from the beginning of it. So, could you go off on that a little bit, lean into that?

[Lt. Gen. (Ret.) Jon Thomas]

Well, yeah. I mean, there's, I think two parts to your question is, validation that we have a problem. We don't necessarily see it right now in the Pacific, but if a burning E3 at Prince Sultan Air Base is not validation that we have a problem on what I would call our underlayer of integrated air missile defense, then I don't know what else we need to have to tell us that we got a problem.

So, you change the scenario, you change the opponent, and if we don't do something different, and we're trying to do stuff, you know, passive means, whether it's agile combat employment or the other efforts that the other services are doing, you know, that's there. But you still have to be able to sense and make sense of the environment. And that's where I think I'll just use APEX as an example, going back to that one, acoustic sensors. If I'm a commander, either as the AADC responsible for the whole theater, or I'm a hub and spoke commander using the U.S. Air Force Agile Combat Employment concept, I want to know what is out there, particularly I want to know what's approaching my installations. Well, okay, so if you have an acoustic sensing network that's out there that's got, you know, persistence in terms of being on fishing boats or on buoys or on high altitude balloons, and yes, you have to replenish it. But you have a sense now, if somebody's gotten close, and they've launched something, it depends on what it is. And it's only going to cue to other higher end sensors that will be able to then provide to the track target and engage portion of the kill chain. But right now, they don't have that. There's nothing out there floating around in the maritime domain that's helping with the air domain, making sense and sensing and making sense of what's going on in the air domain.

So absolutely, Riki, if you think of one of the, let me put one other piece of this here. And it's a translation of this from Indo-Pacific to CENTCOM. All this kind of stuff that we're talking about, if it was fielded in the Taiwan Straits, it would really be helpful if you're trying to sense and make sense of what's going on and coming across. What if we had a similar network of acoustic sensors that were in the Arabian Gulf right now? Would the commander at Prince Sultan Air Base or somewhere else be better informed as what's coming across? I think they would. But we don't have that in the Arabian Gulf. We should ask ourselves why, and when are we going to get it?

[Riki Ellison]

That'll lead me right into Shotgun. But I do want to just clarify that all those shahed drones fly over 20 miles of water or whatever that is in the Strait of Hormuz to hit the base, and we don't cue or sense that until they hit land. So that's automatically a disadvantage on that aspect of it. And I'm going to go to you but also Shotgun, it also seems that the land part of our sensing is separate. We've never had to bring in Navy sensors into the integration of this. We've been doing BMD, we've been doing all the cruise missile defense, we've never done this before. But Ty, three years ago, the Ukrainians have been this for three years, in the Black Sea with buoys, just like you said, coordinating with cheap sensors. Yet we've known about this, and we're a huge empire. We could have copied that, done it. We're

smart. I mean, what? Why? I'm getting fired up about it. But we got to get past that. And we got to get stuff in, into our warfighters that can do this, as we're going to lose, we're going to have a lot more damage coming. We're not going to lose the fight, but we're going to have some damage coming if we're not able to do this.

[Lt. Gen. (Ret.) Jon Thomas]
You're asking me to answer that?

[Riki Ellison]
Yep.

[Lt. Gen. (Ret.) Jon Thomas]
I think there's a combination of distraction, hubris, and lack of a sense of urgency. What I mean by distraction is like, well, we're focused on some of the higher end threats, which are very serious, and need to be addressed. Okay. Hubris, like, well, this is never going to happen to us. What I mean by that is like lower end underlayer attacks, which the answer to that is it's now happened to us.

And then the third is, is that lack of urgency is a combination of that plus you know, you have an overlap, especially in defense against counter UAS, with a whole lot of other, at least in the United States, and some of our, you know, overseas locations, with like civil regulatory agencies. I can tell you that was a problem when I was a Deputy Commander of PACAF. We're working with installation commanders like, okay, let's talk about how we're going to deal with an unidentified UAS that's over your installation.

And those commanders will be working mightily, and we would be working mightily to try clear hurdles that the FAA would like, well, you can't use some type of electronic warfare, because what if it interferes on the GPS for an aircraft that's coming into Anchorage International? Well, if we're under attack, I don't care. But the FAA still seems to care because their mission is safety.

And so we also have to get through and clear through those things and understand when it's just no longer doesn't matter, because we're in a fight and we got to win. That's my answer.

[Riki Ellison]
Yep, great, great answer. Now, if you're a strategic planner, if you're China, you're watching this. And we already know, we saw an article on the oceanic sensors that they're distributing ahead of it.

Well, that potential of hundreds of thousands of an autonomy drone fight seems to be real in 10 times, 20 times what Iran could ever do. How would you count from your perspective? How would you plan against that? And how would you counter it? I know offensive strike, great. But how would you deal with this thing as it comes up?

Is an autonomous command the right way to do this for this country? To have someone in charge, four-star in charge of this? I'm just giving you a little broad perspective. What would you do to break China?

[Lt. Gen. (Ret.) Jon Thomas]

Well, I need to understand a little more about what you mean by an autonomous command. But the idea of reorganizing and moving the chess piece and stuff like that...

[Riki Ellison]

Let's just go drone warfare, both offensive and defensive. That's what I would mean by autonomous at the level of this kit.

[Lt. Gen. (Ret.) Jon Thomas]

Yeah, I'm still not ready to like sign on to that. There's a reason why we're organized as services and why we've also had the combat and command construct and geographic and also global. And it seems to work well for us. And I want us to all understand why we believe that wouldn't also continue to work while we employ autonomous systems.

[Riki Ellison]

But we're struggling with it.

[Lt. Gen. (Ret.) Jon Thomas]

Yeah, we are. I mean, but it's also, you know, we've been using them for a while, but at the scale and the magnitude of what is now required, I think that's a phase shift for all of the services and all the combat commands for employment of force. And it's going to take some time. I don't know that that requires a major organizational change. That's what I'm saying.

In terms of like the PRC, and I'm not going to build up those guys to be 10 foot tall. But what I will agree with is that they're watching and they're learning and they will change. They'll change their doctrine, their tactics, and that will change their technology. And they're going to try to find the seams where we have not solved the problem. And they're going to try to drive through those seams. If it's volume, or if it's some particular tactic that is working that the Iranians are using or the Russians are using against the Ukrainians, they're students of warfare. They're going to figure that part out. And we better realize that close those gaps and take advantage of what we see as advantages ourselves.

[Riki Ellison]

Okay. Well, you've given us a lot of time here. Let me go over to your teammate, our rookie still. Thank you, Ty. All right, Shotgun, there's a lot here. Would like you to chip in now on your perspective of breaking China.

[Mr. Thomas Browning]

All right. And hello from the land of enchantment, but you've got a blurred out office here instead of beautiful mountainside. So you have to take what you can get.

Hey, I'm going to answer. I'll try to keep my opening part a little bit brief, but I'm going to answer kind of both the intended words on breaking China. And the first one is that linebacker in a China shop and give a shameless plug to our roundtable last week, Riki, and just this idea that for us to break China in the US, it's about figuring out how to rapidly pivot what we are buying, rapidly integrate new capabilities, and saving people having to listen to the last one. I would argue there's kind of five main points that I think are important.

The first one has some subsets. And again, that's that idea of embracing the concept of iterative development. And that includes being willing to accept a lot of risk in that initial

instantiation, getting things out into the field, out in the hands of warfighter as early as possible. A corollary to that one is we currently have very stodgy walls against the kind of money you can use as you go from building up an idea to a prototype to initial acquisition and procurement. We need to knock those walls down to allow a great concept to very rapidly find its way into experimentation and iterative development. And once you know you got your hands on something good, I want the hands of the men and women in uniform even before we get it perfectly right. And then you can get it perfectly right and get it out the door.

And then a drum that was beat earlier that I think is important is we need to embrace and understand the value that our allies and partners bring. That is both with capability and with information. And so ensuring that we are leveraging those tools that our partners and allies are building and integrating those in with just as much speed and just as much vigor is important.

And then the other side of the coin touches on, I would argue, one of my standard answer to one of your concerns earlier. And this is that broken nature of, I've got an air battle, I've got a land battle, and I've got a sea battle. And at the time of conflict, I got to figure out how to tie it all together so everybody sees what everybody else sees, but that I can kind of talk to each other and I can tell you, and it's this ridiculous collection of trying to create ad hoc networks at the time of conflict.

[Riki Ellison]

And that's what we're doing now, correct?

[Mr. Thomas Browning]

It is actually what we're doing now.

And so the alternative is buying things joint. And again, as you've heard me say before, I'm not faulting the way the services are doing business because they're doing business the way the law is. But what we ought to be doing, with command and control, is buying an architecture that everybody uses. And with the onset of very long-range ordnance, whether that is a Shahed or an intercontinental ballistic missile, soldier, sailors, airmen, marine, and guardians are all under the same threat. And frankly, because we all have very long-range ordnance on the ground, in the sky, on the sea, we've got to understand how to deconflict our ordnance range.

So it drives us to this need to not think jointly, but literally acquire jointly. And whether that means grabbing lead services or approaching things from a mission perspective and then driving that into service acquisition, there are a lot of ways to attack that problem. But as long as we go in with multiple budgets, buying unique and different entities of the exact same thing, that is going to prevent us from being that bull in the China shop.

[Riki Ellison]

That's going to take so much time to get to that point. You're taking that risk.

[Mr. Thomas Browning]

I don't agree. In fact, again, if you as a department look at a challenge from a problem perspective, and as you know, the vision of CJADC2 was this. It was the idea that we would

look at the challenge of communications, I'll say the Pacific, it could be anywhere, and command and control, and look for a way of creating an integrated architecture that you plug all the domains into, you plug our allies and partners into, versus having everybody bring their own toys together and then just ensuring that they are interchangeable. So it's that joint by design versus interconnectable by design.

So anyways, that's the bull in the China shop part of the China. What I want to do is flip over to the breaking China on the actual China part. And again, I think this is common knowledge that part of China's impetus is what they would call their counter-intervention strategy. We like to call A2AD anti-access area denial. And the bottom line is they understand the might that we bring it when we can get our stuff close to you. We really do have the best military on earth. But you've got to get that military within range of the adversary, and we have the best mobility on earth to enable us to do that. And so what they've done is they have created very long range kill chains that hold our assets at risk to a point where at least in their mind, our assets are far enough away to allow them to do their will.

So square one is how do we defeat a strategy like that? And I think quite possibly the worst acronym that DOD has ever come up with is counter C5ISRNT. So many, many letters basically means break all their intangible stuff. In Assault Breaker 2, we boiled that down just to counter-targeting. And if you think that China's impetus and their belief and their plan is I'm going to keep the US out of the fight while I do my business, the key to deterring China from doing that fight is leading them to believe that that's just not true. And that means limiting their ability to find us, limiting their ability to communicate that to a weapon, limiting the ability of that weapon to communicate in flight or have position navigation and timing, whether that's GPS, beta, etc. So it's going against every single cog within every one of those kill chains. They're designed very specifically to hold the United States at bay.

One area that I know the Department of War is leaning into, but I think they need to lean in a lot faster is, for lack of a better term, again, what we would call non-kinetics. And we tend to be really good at defensive cyber. We have free and fair elections partly because of that. We tend to be pretty darn good at defensive electronic attack. But taking both of those to the adversary to deny that adversary the ability to find us, the ability to communicate it when they find us, the ability to send those signals to those weapons, whether that's from space, from land or sea, and then also preventing that end game. So while I'm all for ubiquitous sensing, short range, as we talked about before, short range defenses and the ability to defend our forces and our bases for that last, we'll call the last 100 yards of the weapon. I think there's a lot, especially with a major nation state like China, that we could lean into that can target those kill chains much, much, much earlier in the fight.

Ty talked about the idea of this no classification, unclassified. And I will say there is a reason and a place for our very high-end products behind the green door. That's fantastic. It's what makes us really lethal. You can't deter with that. So another reason to have overt capability is to have capability that is clear and obvious and present that shows the adversary that their methodology for trying to hold us at risk and push us away is important.

Number two is what I'll call winning the cognitive battle. And I think there's some who would argue with me on this. I don't think if we did get into a conflict with China, I don't think either side is going to win the first punch. And I think following that first punch, it is

going to be a mess. And so to me, the entity that reconstitutes the fastest, so reconstitutes whether that's agile launch and rapid replenishment of space, whether that's putting balloons up, but buying back that ISR, buying back that connectivity, the ability to now find where they are. And the bottom line is pulling yourself back into a zone offense and zone defense versus playing man to man with the limited number of very expensive weapons that we have.

So having a command and control architecture that's extremely not resilient. I mean, I want it to be resilient. The problem is it's really easy to mess with stuff. And so it's really, and I know this isn't a word, but it's reconstitutionable. So I want a command and control system that when you are broken away, you're able to defend yourself. But the moment you join back into the board, you're part of a much bigger, broader picture and part of a bigger, broader team.

So leaning very heavily into who is going to transition back to a badass first world, long range, kick your ass military, I think is the key. And so it's, yeah, it's weathering that storm, but it's really about pulling things back together in a meaningful way, cross all services and with our allies and partners, I think is the second key.

And then the third key, I wanted to touch on drone warfare and mass just a little bit, because it is, has to be part of the, you know, adding complexity to them, adding cost benefit analysis, since they also have extraordinarily expensive long range weapons. It's obviously was and is a vision of the replicator concept is to very rapidly get stuff out. But there are challenges with drone warfare that I think some are not necessarily given credence to.

One is, you know, in the Middle East and in Ukraine, there is ongoing conflict. So you buy an unmanned vehicle, and that sucker's out there trying to kill bad guys pretty quickly. But what we know is as you buy things and put them on the shelf, especially in the in the current environment, it ages and small, disposable, usable unmanned things age really, really rapidly. So filling massive hangars full of 2026 unmanned vehicles may or may not provide us a whole lot of value in 2031, 2035, 2036. And I think we got to, we've got to think through that. And the moment you make them upgradeable, you're now adding interfaces and everything that are costing a lot and you walk your way into, you know, more, more exquisite weapons.

So just that low end weapon does not age well. And so when you buy it, when you need it, that's awesome. And I think that's a reason to have very agile manufacturing, you know, maybe buy enough for that initial onslaught, but then kind of hold our horses and don't fill hangers and hangers full of these things. And instead, invest in our manufacturing capability to very rapidly build modern equipment at the at the time of need.

The other the second one that's very challenging in I'll say a China fight that's again a little different when you're when you're making the decision to attack is what you do in that that messy middle ground. So, if we are worried about China attacking a country, and they're posturing and we're posturing, do I send out 10,000 one way things, or, you know, or one time use things only to find out that it was a feint. And now they're all sitting in the Pacific Ocean, and I've used up half my arsenal.

So understanding, you know, when and I think this is, you know, I think you're gonna have a long term in any sort of conflict with China where there's a is it starting? Is it not starting? And with manned, obviously manned platforms, or at least reusable platforms, you have the opportunity to show strength, turn around and come back and use it the next day.

And I think we've got to think through that. For a for a large conflict, how I ensure that I don't use them at the wrong time, is a another slight challenge in that. And I think I hit on all some of that helps, but everything I kind of wanted to touch on up front.

So over to you, Riki.

[Riki Ellison]

Okay, hey, that's awesome. I'll let time follow me on this. Yeah, I completely agree. We have the best man to man coverage in the world. We can shut down any single weapon system. But we can't handle a flood in our zone. We are not zone defenders. We're not. And they understand that they're, they're gonna flood the zone.

So it isn't a couple of things isn't autonomous command. You heard Ty's answer to that, to be able to deal with this type of fight. And how do you stop the flood in your zone? How do you play better zone defense? I know you said a couple things against China specifically, against the drone warfare part of it where they can send mass, mass, mass. That's what Russia is trying to do too. Because you can't really fight until you beat that mass down to go. So what from your thought? How do you how I know long kill chain, but let's go to the next level.

[Mr. Thomas Browning]

Yeah, so I don't know. I'll satisfy you. But I'll go there. The couple things, if again, and I touched on these, but if every forward location, and every pocket of fighters only see a picture that's produced by a single domain and or see the picture that's produced by their individual stuff, and are all making their own decisions on responding which is the way we're doing it, you've got a big problem.

Our joke, one of the jokes that we've had in the past is, if you showed everybody in the US where that one Chinese aircraft carrier is, and everybody gets their own choice, we're going to have 10,000 weapons all going against one threat. And so now as you get these numerous threats coming towards you, unless you can deconflict, and even better than deconflict, actually plan and allocate weapons at a larger scale. And again, it gets to this point that these aren't, you know, 10 mile drones being thrown over a fence, you know, with a DJI Pro, the even though they are cost effective, these things are flying for a while. And Riki, you and I, you know, all of us know this, but one of the one of the success stories for Ukraine is they've learned how to position forces forward, and I'm attacking these things earlier, I'm not, everything's not, you know, point defense. And so I absolutely think point defense is necessary. And I think we underplay it. And I think we're seeing that, you know, as Ty brought up in the Middle East. But I really do think this idea of aggregating our thinking at a much broader geographic scale, to include the underlayer, to include short range stuff.

And again, when I'm doing short range defense, I'm all for giving everybody, you know, weapons clear, do what you need to do to defend yourself. But the moment you start relying on long range ISR, we need to have a comprehensive approach where we are effectively allocating our weapons versus letting everybody just shoot the things that they happen to see and try to kill. So it's that, to me, it's that idea of taking what, what I would argue, taking what we would historically think of tactical, a tactical scale, and making those kinds of decisions that more what we would historically have called the operational scale.

So pushing that bubble wider and wider and wider, where we're able to have common sense making, common decision making, and interrelated fires, as opposed to independent fires. So hopefully that makes sense.

[Riki Ellison]

Well, the autonomous command, and you went right directly to Ty's Artemis program, where he answered a couple of those right there.

[Mr. Thomas Browning]

I agree with you, he did a great, I mean, they did a great job on that.

[Riki Ellison]

But yeah, the autonomous command, is that worth doing or not?

[Mr. Thomas Browning]

Yeah, so I will tell you, and this may just be because I got a gray beard, but, you know, to me, autonomy is almost a catchphrase, because when we provide autonomy, we provide enough understanding of, you know, so the human has already been in the loop has made those decisions. So, so I think being able to rapidly launch a bunch of things, based upon an understanding of the battle space, whether you hit one button, and things launch from 50 places, or I tell 50 people to launch, I almost don't care. I think having a mode, you know, a big button that you push, and it just says, hey, you know, hey, Hal launch weapons, whenever you think it's smartest. I think what we found over years, and again, technology may get there. I don't think technology is there. I think the ability to take good command decision making, and turn that into automatable thinking at the macro scale, I think, I think we're a ways from that.

So, I think that decision making probably still needs to stay within the mind of humans. However, I, it doesn't mean you necessarily have to tell 50 different people who have to hit a button with their own finger.

So, taking our systems and integrating, integrating weapon systems over very large swaths of territory, and having the ability to centrally execute those weapons could be an amazingly good idea. And maybe that's what you mean. But if you mean, providing, you know, kind of a computer-controlled trigger, I turned on the magic defense system. My technical opinion is we aren't there. And I actually think there's every chance you're going to waste a lot of ordnance if you do it that way.

[Riki Ellison]

Just one little question, because I got it, I got to do it. Ty gave great three, three answers to that question. And I know today, we're trying to get those automated guns and Sky fortress with the Ukraine into our bases, we're trying to do that.

Why in the hell? Why in the hell three years ago? Why couldn't we as a country copy that, duplicate it and scale it? Why? Why? Why are we relying on backyard garage production in Ukraine that we can't control and cannot even scale? We're stuck here. I mean, whoa. I don't understand why we don't duplicate things and copy them and pass them up. When we know that you're directly involved with this. So I'm just curious now on why we're relying on them right now. Go ahead.

[Mr. Thomas Browning]

As I alluded to earlier, I really do think in, you know, I'm a broken record. The way we buy things is broken. And there are there are changes in the current administration that if leveraged may really enhance our ability to do things quickly. But, you know, when Ukraine gives us, you know, a Sky Fortress sensor, or even if we could duplicate it, I don't even care. You know, I understand they have the intellectual property. But the processes with which we go from finding something, iterating on it and getting it to the field is glacial. And it is a problem.

And then the second part that, you know, again, ultimately, somebody's got to make decisions. My very strong opinion is that we have grossly, grossly underappreciated the need for forward based defense. So I think there is a prioritization problem. And I think we're, you know, we're living it and hopefully it'll change based on what's occurring in the Middle East. But I think the technologies have been there for a long time. I think the will to put appropriate resources against it has not. And I will also say yet again, and again, I know another department is trying to address this.

But, you know, soldiers are trying to figure out how to defend posts. Airmen are trying to figure out how to defend bases. Sailors are trying to figure out how to defend ships. And it's all completely disconnected, independent thought. Now there is ANS has pulled together, you know, a tribe to try to think together. But it really is with few exceptions, all the exact same problem set. And we probably ought to have, you know, a single integrated, very aggressive acquisition path to create those last mile sensors, to create those last mile weapons and deploy those weapons across, you know, across the U.S. and our allies.

[Riki Ellison]

Yeah, it just seems like we have the perfect storm. We hit the perfect storm for these guys, for our opponents to be able to.

All right, Ty, please engage Shotgun on a couple of these things that we're discussing right now?

[Lt. Gen. (Ret.) Jon Thomas]

As, you know, to shotgun to your comments on the acquisition system and the extreme difficulties it has had and continues to have, you know, responding to the threat environment, just rapid evolution. I do eventually, or I always kind of look for, is there a point of light out there somewhere? I'm interested in your opinion on, I think the acronym is

LUCAS. I think it's Low Cost Unmanned Combat Air System. Basically, it's us taking Shahed or whatever it was that, you know, we got our hands on. And I think we reverse engineered it. And it was a government effort to design the spec. And then I think they have, because it was government owned, provided to a few companies said, hey, go start building this. And if we wanted to do it more, because the government owns it, they can have multiple different companies build it.

Is that a possible point of light in terms of going, you know, not requiring big, heavy development, recognizing that, hey, maybe somebody else did something that's actually working. And we can just adopt it instead of trying to invent our own. What do you think about LUCAS?

[Mr. Thomas Browning]

Yes, I think you're unintentionally playing to my ego. So that was my office. So that was my office that did it under our prototyping guys. And at the time, my DASD was Mr. Alex Lovett. And this was his baby. It was leveraging Raider, which, you know, got a lot of bad press actually. And so we went from this being a concept to being a prototype activity. And the team just did amazing. I will tell you, walking into the POM 26 deliberations, it was a nightmare for me, getting DOD to open their eyes to why this is so special and why it's so important.

And I will tell you, I'll give two shout outs, not by name, but by organization. SOCOM and the United States Marine Corps were astronomically good partners and kind of joined me in, you know, fighting the wind and fighting the system. And we got LUCAS both funded in 2026. And there are relationships to Replicator, and I can't remember where the cut line is. So I'll just say there are also relationships. So the bottom line is we did, in fact, build an alliance.

But it's back to this, you know, every service goes, not me. And, you know, like I said, in this instance, it was actually SOCOM, you know, a joint command who said, basically, I don't give a crap who buys it. I'll buy it if you let me buy it. I don't give a crap who buys it. We need this. And again, the Marines added their voice to it. And you do see the amazing work. And, you know, Riki heard me beat this drum a whole bunch in our last roundtable. But the power of experimentation.

So, you know, able, we were able to get through prototyping. But even more important than the prototyping was Alex and the team getting this out into the field, experimenting with a warfighter and being able to show those who maybe didn't get it why it brought such a powerful capability and was able to, you know, back to perfect storm, we were able to get a production on something that was inexpensive and rapidly producible quickly enough to be of value in this conflict.

So I absolutely think it is a success story. I actually think if we had embraced Raider, the program, and it no longer exists, but if we embraced that, in the way we intended to run it, we would have had a lot more success stories just like that.

[Riki Ellison]

Hey, Shotgun, how would you do Ty's program on Artemis to be able to take that and scale it? How do you do that? That's in a university lab with the programs? How do we speed that? Or what would you do to?

[Mr. Thomas Browning]

Yeah, so, so, again, I will get both a shout out and a complaint. You know, we have organizations like SCO, the Strategic Capabilities Office, do 6.4 prototyping and bring in things. The problem is we don't, again, my opinion is greatly increasing the amount of joint prototyping we do. And frankly, I can prototype it jointly. And a little bit like LUCAS, once I figure out, holy crap, I'm on to something good. Now I can figure out which service pays for it instead of having to have all, you know, again, all five services do their own thing.

So what we proposed at the end of the last administration, and I know that there's thought still in this administration, is having a more robust joint prototyping agency with the intent of taking, you know, a kick-ass idea from industry that's almost there, a kick-ass idea from academia that's almost there, as well as ideas from DARPA, ideas from the individual services, and having an organization that is ready-made to rapidly intake, to rapidly prototype in the hands with that partner to make sure it's militarized, ruggedized, to make sure that it's something that I'm comfortable getting into the field. And then very rapidly getting that into an aggressive experimentation campaign that gives us all of the data necessary to show everybody on the Hill and everybody in the Pentagon why it's so important that we add kerosene to the fire and get this thing going.

So to me, the missing element is this idea of a very reactive year of execution prototyping organization that can partner with entities like University of Hawaii to turn those ideas and those concepts into an operational prototype as quickly as possible, is what I think is needed.

[Lt. Gen. (Ret.) Jon Thomas]

Yeah, Riki, can I jump in? Yeah, so first of all for the audience out there, that was not a shameless softball throw to shotgun there. I didn't know you guys did LUCAS. So, but I mean, so Riki, bringing up the point of light is, so I think at the lower end that stuff can work. And I think that the lower end on like dealing with underlayer type threats, I think all of this can really work. We're not going to do that to produce a sixth-gen fighter, right? You need high-end defense primes that can integrate and do all that kind of stuff.

Okay, so I mean, we only have a few minutes left. There were a few questions that came in. I think we should address these.

[Riki Ellison]

Yeah, absolutely.

[Lt. Gen. (Ret.) Jon Thomas]

And so I'll put this out to either of you to take, and then I've got at least one part of an answer too. But so the question was asked, you know, growing up, I was inspired by the story of Wake Island. Heroism, bravery displayed on that one day still echoes. Can we perhaps give some shout outs to highlight good work that is being done to defend, to fortify, and make ready remote U.S. and allied positions in the Pacific today? So, you know, any

thoughts on that, on things that are going on right now that maybe aren't like, you know, the combat that went on at Wake Island and the resilience of those Marines, but good work that's being done. I've got one example that I would definitely want to identify, but pause there to see it, or give you guys some time to think while I'm...

[Mr. Thomas Browning]

No, so I'll tell you what, I'll answer vaguely, and then let you run from there. And I want to beat this experimentation drum just a teeny bit more. But in my former life, we created the Joint Fires Network and brought that to INDOPACOM. And whether that started the storm or just, you know, enabled it, INDOPACOM-J8, the service components on the island, all have embraced very robust experimentation campaigns, very high willingness to bring in less mature products and get them into the field and test them.

So I think, in a good way, I think there is the structure, you know, under Bob Stephenson, there's a structure on island, and also with the independent services that is really more open than I've seen in a lot of other places to getting new concepts and new ideas in the field and trying to help flush those out.

[Riki Ellison]

I would reach out and say that, yeah, the Army's doing some great things in Guam on expeditionary air defense force. It's maybe not for all of Guam, but for its ability to move across the Pacific and put capability in place. They're figuring that out in Guam to do that. So that's one.

I think there's a lot of movement with communications that we're doing between islands, between quads, that can't be cut off. I mean, that's a great thing. I think our allies are moving for the desire to have cheap capability. That's there. I think Japan has got to increase its capacity, quit doing exotic weapons. They got to quit doing that. They got to create capacity of these systems, and we got to put them in a role like that. But I think there's some good things going on that are deterring China from that.

Ty, you got any to that?

[Lt. Gen. (Ret.) Jon Thomas]

Yeah, I'll try to keep it short because we're close to time. But yeah, my example is like a more tactical, but it even has a connection all the way back to actually the World War II. And that is for PACAF, and that's the airmen out there in PACAF that are rebuilding runways on the island of Tinian.

So if you remember, from the island of Tinian launched the Enola Gay, dropped the first atomic bomb used in combat. And they are rebuilding the three runways that are out there to support agile combat employment, to overcome the basic tyranny that less land for us to operate from, and a lot of ocean. So we're going to be concentrated in some places. So let's spread out as much as we can. So there are Red Horse Airmen, civil engineers that are sweating this very moment that are out there rebuilding runways in Tinian. And I think we should all thank them for it. So I think that fits with the spirit of the question. Thanks, guys. And I'll turn it back over to you, Riki, for wrap-up.

[Riki Ellison]

Okay. Just one last comment. I know we're having very difficult times integrating over there now. And one of the ways out of it is the unclass, non-class being able to move that data more quicker with new innovation. That's the struggle right now. We're going through that struggle. FAADC2 versus brand new cloud-to-cloud innovation that's going on. So, there's a lot here. I thank you for each of your time to come in and give these perspectives. I mean, the timing of this is remarkable. So I want to start with you, Ty, because you got to go first, but to close up what your thoughts of the session were or movements going forward.

[Lt. Gen. (Ret.) Jon Thomas]

Not a whole lot more to add. I mean, breaking China can mean a lot of things. But first and foremost, we've got to make sure that the stuff that we need to break China is going to be there after that first punch, as Shotgun mentioned, and even after the second or third or fourth, so that we're resilient. That means we got to defend at all layers, and we're not there yet.

[Riki Ellison]

Thanks, Ty. Shotgun?

[Mr. Thomas Browning]

Yeah, I think I've already said it, but that is, you know, the technologies that need to exist to get this right are friggin' there, and many of them are there at very low cost and very low security level. We just need to be willing to buy it, and we need accesses and ways of enabling us to buy, to iterate, and to improve. Yeah.

[Riki Ellison]

Well, from all of that, breaking China is breaking culture. You can't break culture, you can't break China. And that's where we're at. We got the technology. We all know that. It's about a bull, a linebacker, breaking China that's existing today that's preventing us to get this stuff to our warfighters, to break China. That's what it is.

I love the discussions that we had today, the technical viewpoints, the perspectives have been phenomenal. And I believe the audience greatly appreciate your professional perspective. So thank you, linebacker up, break some China. Thanks, guys.