

Mr. Riki Ellison:

Good afternoon from a great day here in Virginia, a beautiful summer day, early. I'm Riki Ellison. I'm the Founder and Chairman of the Missile Defense Advocacy Alliance. We are on the sole mission to educate and advocate for the deployment and development of missile defense systems around the world and especially for our national security in our country. I've been doing it for 40 years. We created MDAA 20 years ago and have been through, I think seven presidents, administrations, from all the way back in 1983 to where we are today. We are excited. This is our 50th, virtual, 50th Congressional Roundtable. Before virtual, we actually were in Congress doing these tables of discussions. So this is our 50th one, and it comes at just a great time when Congress today and this week and most likely next week, will come up with their final National Defense Authorization Act and putting forward the missile defense priorities as we see it and we'll gather probably one of our best teams ever, I think, from us. We've got over 137 years of experience in policy and operations and in acquisition.

Mr. Riki Ellison:

So today, I have the former Under Secretary of Policy, John Rood with us. We probably have, I'm going to say, the best F-22 pilot in the country, and I want to welcome Charles Corcoran, just recently retired Major General onto our board. He is accepted to be on our board of MDAA and he will be here as a former, just recently Deputy Assistant of Operations for the US Air Force. And we have Neil Thurgood, who had 37 years in the Army and also former MDA Test Director, but on the Rapid Acquisition for the Army. So that's a phenomenal person to have with us. And we end with one of our best intellects, I think, and a national security asset, Mark Montgomery, who's had, I think he's had about 32 years in operations, but more importantly, the last five years he's been on The Hill actively involved with Congress. So that's our team today . That's where we're going to come to you from.

Mr. Riki Ellison:

So we understand that the NDAA is really Congress's ability to balance and check the administration and put forward from the people's perspective of what should be done, both really in policy and in investment in current capability and future capability. That's what this act does, and it also goes for a five-year plan of acquisition development during that. So this act begins a five-year plan to end in 2028.

Mr. Riki Ellison:

From our perspective, 2028 is a long ways away, and we are going to see real threats. And we need to deter those threats before '28, so heavy investment should be going into capacity with current capacity right now and certainly policy to enable us to use our capacity that we do have against the threats. And the threats have been established by the Secretary of Defense in 2021 by the President of the United States and continued to be reaffirmed in testimony this week, last week with our COCOMs and with our OSD policy, Department of Defense were the pacing threat, the number one threat to the United States

of America, is China. The number two threat is Russia. And that's where it stands. Those are the two major players.

Mr. Riki Ellison:

And if you look back two years from here on February 4th, 2022 in Peking, in the opening of the Olympic Games there, President Putin and Jinping were together, and they made a joint statement for the Russian Federation and the People's Republic of China to establish international relations in a new era with global sustainability. 20 days from that speech, Russia declared a war that they're still in with Ukraine. That war has seen over 6,000 missiles, 300,000 casualties, and billions and billions of dollars in destruction in infrastructure.

Mr. Riki Ellison:

And the other side, five months since that agreement, our Speaker of the House traveled to Taiwan, and the Chinese have done a record high, doubled, flight intrusions illegally into Taiwan airspace, 1,737 over the past year, and demonstrated missile shots around Taiwan in their overmatching of that. That's a real threat. And we have generals that have publicly said that 2025 is an opportune time for the Chinese to make a mark on, or take back Taiwan. So what we're doing has to be done and has to be done to deter their abilities to do what they're doing today.

Mr. Riki Ellison:

So I'd like to focus on three major areas of the world, starting with our US homeland, and do we have the policies first off to enable us to be able to create capabilities in defense that can deter the Chinese and Russian threat to the North American continent? And we've got to look at current capabilities that we have to have between now and '28.

Mr. Riki Ellison:

And then, move to look at Guam, that we are going to spend over \$8 billion, us, American taxpayers, on a missile defense capability to defend our forward projection force in the Pacific. And we ask, you've got to have hypersonic Glide defense. You can't build a system over the next six, seven years that does not have the ability to track, create fire control, and to be able to shoot down hypersonic Glide. Or else, you build that, and have got one or two of those missiles that are indefensible to do it. And so, that has got to be looked at in a very serious manner, because we are not getting a hypersonic Glide vehicle defense until the mid 2030s. We are investing less than 2% right now of our defense budget on development of that. We're investing less than 1% on our HBTSS's, which is a demonstration where we believe that you can get a constellation of 24 HBTSS's and get the Glide Phase Interceptor in place by '28. That's critical. That is a big part.

Mr. Riki Ellison:

And then, we look at Europe. When you look at Europe, and we'll spent probably close to \$20 billion in operations and capability development on the European Phased Adaptive Approach that has vast capacity against ballistic missile defense, but it is not allowed to go against Russia. It is built specifically for the defense of Europe from Iran. And we have problems in Europe, and same with the United States, that we have a separate BMD capability and then a separate cruise missile and air defense capability that have to be merged and we have to have open architecture with our allies. We cannot do this alone.

Mr. Riki Ellison:

So those are some of the big challenges that I see forward. I see this as a great opportunity to discuss those and to vet those out and to take questions. So each of our presenters are going to spend about 10 minutes or so, or seven to 10 minutes. And then, at the end we will have questions. And we're going to start off with the esteemed, honorable former OSD Under Secretary for Policy, John Rood. John, it's all yours.

Mr. John Rood:

Well, thank you Riki for inviting me on, and you've got a great panel set for this discussion today. The timing of this discussion is also quite well-chosen. So point number one, we really are at a pivotal period in national security history. And if we take a big step back and we look at where we are at right now with a rising China, and one of those unique moments in history, deciding to openly challenge the United States and others to be the leading power in the world. And on this, they're quite clear, whether it's in the Communist Party of China's documents, the President of China, Xi Jinping's statements, that that is the ambition and to change the global order with China at its center.

Mr. John Rood:

And then, we also have this unique period where Russia, another great power, engaged in the largest conflict since World War II, and the two of them forming a growing alliance. And so, we are, as a national security establishment in the United States and in the West, pivoting and moving towards that. But I say it's a pivotal moment in that I'm not sure history will look kindly on us that we are moving fast enough. And if some of the things that are certainly very live potential options could occur here in the coming years, how will we feel about ourselves and our rate of progress and the way that we're maneuvering to deal with that? And I think we will say we were not moving fast enough or heeding the warnings seriously enough should something occur. And I think even if a confrontation, a conflict, does not occur, we're still putting ourselves at a disadvantage to preserve the peace by not having sufficient deterrent capability with missile defenses, with other capabilities, with offense and defense integration that you talked about.

Mr. John Rood:

Now, in order for us to do that, we have to be cost-effective and be smarter about the way we're doing it, not simply throw mass at the problem, because that won't be an effective strategy. But there are things that we can be doing with the way that we're using the force, that we're integrating the force, and we're having the roles and responsibilities to efficiently do this. And Congress plays a very central role in this.

Mr. John Rood:

To pivot to a discussion of Congress for just a minute, sometimes when you talk to people that have spent their careers in the executive branch, they tend to think that the president's budget is the centerpiece of that. But if you look at our history, actually, we went for about nearly two centuries where the president never submitted a budget to the Congress. The constitution gives the central role for policymaking and for the power of the purse to the Congress. The president's budget is a recommendation that the Congress considers.

Mr. John Rood:

And so, as the Congress starts to lead, I think that's the leading edge of the debate right now, about what should our policy aims be. So let me make a few fundamental points that I think are sadly not reflected in policy. First, the greatest threats, and there's bipartisan consensus on this, to the United States and to our way of life, are the threat from China and the threat from Russia, and the growing alliance between them. And yet, our missile defense policy does not allow our military commanders to defend against missile threats from those countries.

Mr. John Rood:

So imagine the spectacle that President Putin has openly threatened to use missiles and nuclear weapons against our allies in Europe or those that are enabling the Ukrainians to resist his aggression. That would be the United States as the principle leader of that. If the Russians should attack Poland or an inadvertent missile launch come towards the sites in Romania and Poland, that the United States taxpayers have spent several billion dollars in and years constructing, developing, equipping, and our soldiers are there today, those commanders are not able to use those systems to defend themselves. They always have a right of self-defense, but the policy doesn't enable them to truly protect the surrounding area and against a missile strike from Russia. And that needs to be changed. And also, we've spent several billion dollars to equip these sites with missile defense, ballistic missile defense capabilities, but have not enabled them to have the ability to defend against cruise missiles or to conduct offensive operations.

Mr. John Rood:

We need to, as a policy matter, move away from this artificial distinction, which doesn't match the world anymore, that offense and defense are somehow very separate, number one and number two, that defense against some missiles is okay, but defense against others would not be okay. We need to get to a rather fundamental point that our policy is to defend against missile attack from any source, to

include China and Russia. And we need to begin to have an architecture which is optimized for those purposes.

Mr. John Rood:

We have a similar situation in the continental United States, where the Commander of Northern Command, General VanHerck, has testified to the Congress that he doesn't have the policy authority to defend against Russian and Chinese strikes on the United States, and for ballistic missiles, hypersonic missiles, cruise missiles as well. And in the cruise missile area, what's disappointing about that is that when you look at the suite of capabilities the Russians are demonstrating in the conflict in Ukraine, as you mentioned, some 6,000 missiles launched by the Russians at Ukraine, a large number of those have been cruise missiles from air-delivered platforms. And those things were developed by the Russians with the United States principally as the target and the US military as its principal adversary.

Mr. John Rood:

So one, the Russians are openly stating this as a possibility, to include, some people may have forgotten during the last administration, President Putin at a national celebration displayed an animation in which the Russian missile attack targeted Florida at a time when the President of the United States had his residence in Florida. And the video ends with an explosion.

Again, this is not an accident, and what the Chinese are talking about, so we need to go to school on the conflict in Ukraine and adapt our policy accordingly. And in the conflict in Ukraine, Russia has used missiles as a principal weapon of warfare in very high volumes of employment. Their Air Force is not conducting large-scale bombing. The naval force is largely pushed out in a perimeter due to concern of being attacked by the Ukrainian forces. And so, you're seeing a real adaptation in that conflict for the Russians that's relevant for this audience.

And so, at NATO, there's a policy as an example that the Alliance will not defend itself from attack except for from Iran and North Korean missiles. Well, that simply doesn't make sense when you have the leader of Russia, A) using missiles in high volume and B) threatening to use them against the Alliance. There's an upcoming meeting of heads of state in government in just a couple months at NATO, and that would be an opportune time. And our administration should be pushing for that change in policy. That's one of the things I thought Congressman Turner did an excellent job in testimony this week, eliciting from administration witnesses and making the case that that needs to be part of it.

Now, transitioning to some other things I'd argue that Congress should do, its principle power is the power of the purse. And so, as an example, the Congress has the full authority to authorize and appropriate the funds necessary to enable the Aegis Ashore sites in Romania and Poland to be fully equipped, including with offensive capabilities, and to direct that they be enabled to have the full capacity for offense and defensive operations that they have at sea.

A similar thing could be done to authorize and appropriate funds for cruise missile defense and hypersonic missile defense of the United States. And the programs that we have are set to deliver capabilities embarrassingly late, close to the turn of the century. Again, the Congress can accelerate the deployment dates of the existing systems. They can fund a larger magazine than we have. Today's stocks that we have for missile defenses would be woefully inadequate in any conflict in the Pacific or if we came to blows with Russia in Europe. The Congress can change that.

The other thing I would encourage the Congress to do is appropriate money to begin work on space-based defenses. We're out of step on that as a national security establishment. While we have some wonderful green shoots like the Space Development Agency pursuing tracking layers and transport layers of dramatically less expensive, more distributed architecture, we're still not fully applying that to missile defense.

And you mentioned a great example with roles and responsibilities, Riki, where the Missile Defense Agency has been given the lead by the Congress for missile defense to include hypersonic tracking of missiles. But in the roles and responsibilities, that's another area the Congress can step in and insist that the Missile Defense Agency play the leading role on those areas, because we're seeing a turf war emerge between different parts of the Defense Department in that regard, and that the military services adequately budget for the production of much larger volumes of missile defense capabilities. Think Standard Missile-3 interceptors, Patriot interceptors, THAAD interceptors, which we would go through our existing inventories enormously fast in a conflict.

But in the space-based area, the Congress can appropriate and authorize the funds for pursuit of a space-based defense. And for those that think of a time 20 years ago or otherwise when that was seen as infeasible or too expensive, I'd just give you a couple statistics to show that that simply isn't the case. Just last year, in the first six months of 2022, more than a thousand satellites were placed in orbit. That's more than was placed in orbit from 1957, from the first satellite, to that date. And that rate of acceleration has continued. Today, there's 5,500 satellites in orbit according to the GAO. And that's going to grow to be 55,000 by the end of this decade.

And what you're seeing is very inexpensive, highly capable systems. And so, I'll just say we are not embracing that as a centerpiece of our missile defenses and taking advantage of that high ground. And the cost will be dramatically less than many of the negative critics are saying. As an example, the Space Development Agency is estimating, this is their target goal per satellite, \$15 million according to Derek Tournear, for the transport layer for communication satellites. Think a similar number of \$15 million per copy satellites devoted to missile defense, and the impact that could have on a conflict.

So I'll just close there and say, as you mentioned, the need to enable a Guam defense, that's another area the Congress is within its full authority to authorize and appropriate the funds and direct the administration to erect that defense and make it very capable of both offensive and defensive operations. And there's a series of other things, as you mentioned, they can do to accelerate the fielding of the needed capabilities for things like hypersonic, cruise, and ballistic missile defense. So I'll just stop there. There's a lot of other good presenters right behind me, but thank you for having me on, Riki.

Mr. Riki Ellison:

Thanks, John. I do have two questions and one question. So I want to go back to your simplistic viewpoint of roles and responsibilities, because we're having problems in Guam with picking who's in charge on development on the whole thing there. We're having the Senator from Hawaii asking who's in charge of Hawaii. We've got the US homeland, where the US Air Force has been assigned, I guess took the architecture of just cruise missile defense. It looks like we've got JFICIAMD (look it up) moving from STRATCOM all the way up to SPACECOM. So there's movements, but we have been built to fight North Korea and Iran on missile defense. We have not been built to fight someone like China or Russia, and it looks like it. And that was brought up by Angus King in testimony right off the bat. So you've got to help because, is it Congress' duty to make that change, or is it administrations, or is it within the services? But we got to put the best command and control structure on this issue. And either open up MDA's ability to do much more research and development, take the authorities and give them the authorities, and look at their budget. Their budget's focused on Korea and Iran, not that threat where we've got to grow. So just hit that real quick. That would be... You're on mute.

Mr. John Rood:

It's the Congress and the administration leadership, civilian leadership, that they have the ability to really change that. The services do not have the ability to change their roles and responsibilities. They might elbow each other out or try, but it's really those two areas. And what it comes down to for me is, my short answer in terms of who should be in charge of missile defense, and creating the right architecture, and developing the right systems, well, that's the function of the Missile Defense Agency. And history shows, when we have created a focused organization to integrate across the services, we've made the most progress. So we need to challenge them to play that role and empower them to do so. With regard to who operates the system, to me, we don't need to reinvent the wheel. The answer to the Senator from Hawaii would be, the Commander of Indo-Pacific Command is responsible for operating those systems that are developed by others. Or the same thing with other geographic combatant commands if it's a different part of the world.

Mr. John Rood:

With regard to the man, train and equip function, here there is friction, as you mentioned on Guam between the services. And expecting the services to adjudicate that amongst themselves, is not realistic. And history shows that has not typically worked. The Chairman of the Joint Chiefs can play an advising role there, but the statute that's set up, the JCS, also doesn't empower that person to really settle those. And there's a lot of examples in history where chairmen have failed to do so. That's where the Secretary of Defense has got to come in, the civilian leadership, and the Congress. And the Congress can direct those things and has in our history. So I think that's where we've got to challenge them to do that. So for example, the Missile Defense Agency should be responsible for, what is the proper command and control architecture and the means for architecting the force.

Mr. John Rood:

I got concerned when I saw some comments in the media this last week, the representative of the Space Development Agency saying, "Well, we have a different concept in mind for command and control of the Missile Defense Force." Not a good sign. That's a sign that we're going to spend too much money on duplicative solutions that are not fully integrated. And it's tough for the services to do this on their own. Some, like the Air Force, are leading out on things like JADC2 and this idea of global command and control architecture, and I commend them for it, but they're going to need civilian leadership and they're going to need the Congress to come in to support that.

Mr. John Rood:

So that that'd be my short answer. And at some point the developer and architect of the missile defense systems, read the MDA, needs to hand those over to the services to man, train, and equip, meaning buy the additional production units, to man them, and to train the force to do that. That's been their traditional role. Leadership is required to force the services to step up and play that role effectively.

Mr. Riki Ellison:

Thank you, John. And just one comment, you don't have to question that, but I think when you talked about the Aegis sites, or excuse me, the EPAA capabilities, it's not just the two sites in Poland, Romania, it's the four ships, it's the radar, it's the BIMDOC, it is a lot of it. And where we're trying to go I think is having a portable capability that can just go and defend a city or some with a layer defense capability all the way up from hypersonic ballistic all the way down to cruise. And that's kind of the same thing we should be doing in the United States to have that capability on our country that can go anywhere in the country if we wanted to, to be able to self defend that. So we're not just dependent, I don't think on those VLS tubes in Romanian Poland to put SM6s or so forth on, but I'm saying that that whole architecture's not allowed to be used. So that was something. If you want to say something on that but... And we're moving. Okay. All right. So you led that in.

Mr. John Rood:

Thank you.

Mr. Riki Ellison:

Thanks, John. Really appreciate it. Thank you. So ladies, gentlemen, we are moving in to one of the best, like I said, the best F-22 pilot. He's going to get some flack for it. Charles Corcoran, he's had a heck of a career. He's been fluent in all the operations with the Air Force and certainly understanding that debate between air defense and base defense, et cetera on that. So ladies and gentlemen, our newest board member, Charles Corcoran, it's all yours, Corky.

Maj Gen (Ret.) Charles “Corky” Corcoran:

Hey, Riki, thanks for the kind intro and more importantly, thanks for allowing me to join your elite team there at NDAA. I've been wanting-

Mr. Riki Ellison:

Hey, Corky, I want to say one thing, live from New York City, Charles Corcoran.

Maj Gen (Ret.) Charles “Corky” Corcoran:

I am sitting in the building where they do Saturday Night Live here in Rockefeller Center. But hey, thanks again for letting me join your team. I've been watching for the last 20 years the amazing work you've been doing and I hope that I can contribute in some meaningful fashion going forward. And thanks to John and Mark and Neil for joining today. It is like John said, right topic, right time. I know the title today is must do for the FY 24 NDAA. And you asked me to talk a little bit about the Department of Air Force, and what the Air Force and Space Force must do for that. And I'd like to focus on the do part of that, and the fact that there is, as we all know, a big say-do gap. We've been saying we're going to do things for quite some time.

Maj Gen (Ret.) Charles “Corky” Corcoran:

And an example I'd say in the Air Force is what we're currently calling ABMS. Our contribution to JADC 2 started out probably 10 years ago as multi-domain ops and all domain ops, then multi-domain command and control, et cetera. So 10 years conservatively, 10 iterations of NDAAs, 10 iterations of appropriations and little to no movement forward. Nothing's happening. And despite an exorbitant amount of taxpayer money being thrown at the problem, meanwhile, as we've already discussed here, the threat is rapidly outpacing us, fielding capabilities two and a half to three times faster than us if you look at China, but also you mentioned Russia. I still think it's not just China and Russia, I know you guys know this, but we still have Iran, we still have North Korea, we still have rogue actors. The cost of entry into the game where you can send lethal capabilities at the United States or our partners through the air, whether it's small UAVs with explosives, one way attack UAVs, all the way up to hypersonics and intercontinental ballistics.

Maj Gen (Ret.) Charles “Corky” Corcoran:

We need to defend all that across the board. And we are just getting out-lapped right now by everyone from the lone actor to the China's and Russia's of the world. And so we got to change our way of doing business. So the do piece is what I think we need to focus on. And I think Congress needs to focus on putting very specific language in the NDAA. One of the things... And I know by the way, Air Force leadership would like to go faster. You hear it from Secretary Kendall, you hear it from General Brown, you hear it from General Saltzman. But how could, maybe Congress help in the NDAA? But one of what I think is the red herring that gets thrown around a lot in the building is, we got to choose between spending money on stuff that we can do now and really investing in the future.

Maj Gen (Ret.) Charles “Corky” Corcoran:

And I think that's a bunch of baloney in this day and age in the digital age. There's nobody better than the US commercial industry at fielding stuff and then rapidly updating. And I'll give the iPhone as an example. And maybe it's overused, but the iPhone 14 dropped last September, September 22, with it dropped iOS 16. And in the intervening eight months, Apple's released 13 new updates to that software. So they put a piece of hardware out, but they're constantly making it better with the software. Oh by the way, the software's backward compatible to several other models. Tesla's the same way. If you buy a Tesla today and you bought a Tesla four years ago, you're getting basically the same car. The hardware's a little bit different, but the software is the same in those, and Tesla's rapidly updating it.

Maj Gen (Ret.) Charles “Corky” Corcoran:

Elon Musk is doing the same thing with SpaceX. He's getting hardware up there and he's making the hardware such that it can be reconfigured on the fly with new software as they want to add new capabilities. So what should the Air Force do and how should the NDAA help with that? And I would say it applies to the joint force. If you look at how the joint force is talking about JADC2, they've settled on this mantra of "Sense, make sense, act." So sensors, I'll call the next piece kind of C2 and then act would be the effectors and how you're going to carry it out.

Maj Gen (Ret.) Charles “Corky” Corcoran:

So looking at the sensors and how this would apply, I think for as long back as we want to look, we've kind of handcuffed ourselves when we field sensors. We were very hardware focused and we focused specifically on a specific threat we're trying to detect, say it's a ballistic missile, and we program the software that we put in to this widget filters out all the noise that doesn't look like a ballistic missile to make it a very pristine, very capable of tracking that ballistic missile.

Maj Gen (Ret.) Charles “Corky” Corcoran:

And it does very good. Well, the problem is there's a lot of stuff in that noise that really matters. And with the processing power and the software we have today, we could actually be looking inside all that noise with the sensors we have and doing a better job of understanding what's out there in the

environment. We'll take the Chinese balloon that we recently dealt with as an example. The radars we have fielded saw that balloon, it was filtered out and not presented to the decision makers. So how do you fix that? We don't need to go back and build a piece of hardware and take 20 years to field it so it can track balloons. We need to update the software and our existing sensors. You can do that quickly for bringing the right people and put the right resources to it. And when we'll take a lot of resources.

Maj Gen (Ret.) Charles “Corky” Corcoran:

So if I were king in the FY 24 NDAA, one of the things I think should be directed is a comprehensive near term review of everything we have fielded and how we can update those sensors simply by adding better processing power and better software. And that might bring some other actors into the defense game as well, rather than the standard big companies that we see doing most of the work. I think there's a lot of capability out there that's untapped potential across the United States that could help with this. On the other side of it, we do need to field new hardware obviously going forward. And we're going to acquire new over the horizon radars. We're putting new sensors in Guam, et cetera. We're putting new sensors in space, but we can't take 10, 15 years to put them up there.

Maj Gen (Ret.) Charles “Corky” Corcoran:

Again, go back to what I was just talking about. We need to get prototypes fielded as quickly as possible. And the prototypes need to be capable of receiving routine software updates because software is the name of the game. Rapid software integration. So if the NDAA should direct this, it should direct faster and more rapid fielding of sensors at a prototype level and those sensors must be capable of being rapidly reprogrammed into their software. Under the make sense piece, I would kind of liken this to C2 and again JADC2, we've been talking about it for a while, we need to get after the do part. So anything that can be put in the NDAA should be more directive, more prescriptive to the department, just should be done. The Navy's working their piece of this, the Army's working their piece, the Air Force is working their piece, but at the end of the day this is about connective tissue.

Maj Gen (Ret.) Charles “Corky” Corcoran:

So I think there's already a lot of hardware out there, but there are ways to connect the hardware and get it done now. So that, as John was just saying, we can give the COCOMs what they need to do their job. This is a co-com mission and they're screaming for it. Admiral Aquilino is screaming for what he needs to see to his AOR and the services and MDA need to get after it sooner rather than later. And I think again, there are software solutions that could be put in place in the very near term to give him what he needs to see to the fight the way he needs to see to it. And then so sense makes sense and then act. Under the act piece, now this is where I think it is a little bit more of a hardware game, unfortunately.

Maj Gen (Ret.) Charles “Corky” Corcoran:

You got to have the right effectors and we got to have the right effectors that can deal with hypersonics all the way down to, again, one way attack UAVs and everything in between. So anything we can do in the NDAA to expedite the fielding of the effectors we need is a good thing. What I will say is, we've got to get to affordable mass, especially when you're talking about swarms of hundreds, potentially thousands of these smaller things. We can't afford to be shooting effectors at them that cost on the order of magnitude, more of the things we're shooting down. This is where I think you can find software solutions, leverage cyber, leverage electronic warfare, leverage some directed energy, high power microwave capabilities that are available. So there are companies out there right now and if the DOD acquisition system isn't going to do what they need to do to select these companies and get their capability fielded, well then maybe Congress needs to get involved and pick some winners and tell the DOD to field them.

Maj Gen (Ret.) Charles “Corky” Corcoran:

Because there are demonstrations out there right now, you can see where a lot of these capabilities are available and they're game changers. We'll have deep magazines to get after some of these lower end threats and then we can take our really valuable resources and put them towards the hardware we need, that exquisite hardware to take out high-end threats, these intercontinental ballistic missiles, hypersonics, et cetera. So I guess, in summary I'll say that I think, the NDAA needs to focus on the do part of the must do. I think it's time for Congress to be very, very much more involved directing quick wins on the software side and directing rapid fielding on the hardware side of prototypes. I'll stop there Ricky. Thanks.

Mr. Riki Ellison:

Okay, thanks Corky. Let's go into the homeland and sensor gaps. You taught software upgrades on that, but for the low slow, low heat signature cruise missile capabilities, I think we're bringing E-7s, very expensive to operate over the top. You got to over the horizon, that does have its own limitations. And you've got our radars already, that line of sight, you can go underneath those. So the dirigible, the elevated persistent overhead capability seems like it's something that needs to be re-looked at, and whether it's the stratosphere all the way down in 20,000 where you can reduce... I've seen some study that 4,000 sorties can do one dirigible for the same deal. And I'm just wondering what that... I mean, is that something the Air Force is looking at or are we waiting for satellites and space to do this mission or other things to do this mission?

Maj Gen (Ret.) Charles “Corky” Corcoran:

Riki, we can't afford to wait. It's a great question. We need persistent coverage of every inch of airspace approaching the homeland. And our allies deserve the same. And so what I would do, we need a comprehensive look at the sensors we have fielded now. And the areas that they're covering, what can we do to tweak what they're looking at to maybe allow them to see more things. And then the blank spots, the blind zones, we've got to get persistent coverage of those. Whether that's with dirigibles,

whether it's getting the PLEO fielded on an accelerated basis, whether it's accelerating E-7, which the Air Force is trying to do. But all these options need to be on the table. What we don't need to do is keep trying to fly 50, 60 year old AWACS airplanes that work about half the time and can't see the threat we're looking for.

Maj Gen (Ret.) Charles “Corky” Corcoran:

That's a losing proposition. So yeah, all the things you said need to be on the table and we need to go faster. But I think there's a lot of capability that's untapped in the sensors we actually have fielded for the areas where they are looking, we can leverage software so that they can see things better. But there are blind spots. And the blind spots are unacceptable, like you said. So if it's dirigibles, if it's the PLEO, if it's E-7 to help fill gaps, there are options with unmanned airplanes and repurposing them. Think like an MQ-9 and putting sensors on it. There are electric UAVs that are coming available that can stay up for months at a time. So you put some of these things up there with the right sensors and then it's just having, again, the software on the back end to process all this information, present it to the user.

Mr. Riki Ellison:

Okay, Corky, one last question, a more difficult question is airbase defense. And I know there's an internal debate inside the Air Force whether they should do it and it's Army mission, but Army's got very limited capability and capacity to do that. And then moving into the hub and spoke, which is what that Guam position is, to be able to do ACE and explain that to everybody on the agile ability to defend air bases or airstrips in the first, second iron chain. And where we're at with that, is that a roles and responsibility mission, change requirement, or is the Air Force just going to do it on its own or? Where is that when they can't get the capacity or capability from the Army to do that with what they want to do in their strategy?

Maj Gen (Ret.) Charles “Corky” Corcoran:

Well start back with where John was explaining the COCOMs fight. All right. And the services present forces. So the Air Force and Army, Navy, Marines, special operators, they're all going to go forward, say for Admiral Aquilino, we're going to give him the forces he needs to do what he needs to do. He's going to expect those forces to be protected. The first order of business to protect him is to understand the environment. So the sensors, we've already talked about, we got to get out there. Then what you're talking about is what are the effectors on the backend or how do we use that information to make sense and then act on if China starts to lob missiles or whatever our way. And there are limited resources to do the job. So I think it's going to be up to Admiral Aquilino and his team to choose how he wants to use the capabilities that are given to him, presented to him by the Army, the Navy of the Air Force, Marines, to protect the forces that he wants to protect so he can conduct the mission.

Maj Gen (Ret.) Charles “Corky” Corcoran:

The Air Force, obviously no organic capability. We are pursuing, the service is pursuing, some things like a hypervelocity gun weapon system. But everything that they're pursuing, they're trying to make sure it's integrated with MDA's plan for the defense of Guam, it'll integrate with the Army systems. And then the other thing that the Air Force is doing, which you touched on is the passive defense piece of it. The ability to move around hub and spoke, to try to deny and deceive, move inside of the Chinese targeting cycle, if you will, so that aren't anywhere long enough that the Chinese can find you and hit you. That's a dangerous game to play. We'd be much better off if we could sense, make sense, and then actually act on any incoming incoming threats, whether again, there's small UAVs, all the way up to hypersonics and ballistics. So the debate needs to continue, but meanwhile the Air Force is going to do what it can with the resources it have to try to protect the forces that it'll put forward for Admiral Aquilino, General Cavoli, or anyone else.

Mr. Riki Ellison:

Thank you. Thanks Corky.

Maj Gen (Ret.) Charles “Corky” Corcoran:

You bet.

Mr. Riki Ellison:

Okay. I don't know if I see Neil yet. I think we're going to go to Mark. So thank you, Corky. Would like to introduce another board member, Mark Montgomery, to go forward. Mark?

RADM (Ret.) Mark Montgomery:

Hey, thank you Riki. Look, overall I just want to talk quickly about the NDAA. I think the president's FY24 budget was a good starting point. It's going to need quite a bit of modification. I'll talk directly to some of the systems. I think for the defense of Guam, the department has successfully settled on the most expensive, least efficient and slowest delivered possible plan. But they have settled on it. And I think that's where we are now. And we've, I've been through this before so I won't go through why. At some point, if you just wanted to have something quickly in 2025 that could have defended you, you would've put an Aegis Ashore deckhouse with two to three VLSs, bought NASAMS and integrated along with the existing THAAD, which all talked through Link 16 and JREAP. And you would've had an effective defense of Guam by 2025.

RADM (Ret.) Mark Montgomery:

That opportunity has come and gone, and now we're stuck with a very manpower intensive, Army forces intensive unit structure, which is fine. If people were cheap and everything existed already, we're doing this in CONUS, that'd be fine. But we're talking about OCONUS, putting a thousand plus people to handle radars, trucks, multiple launchers, all replacing a very tight, an Aegis Ashore is 56 operators to include the VLS. And I'll just say 56 doesn't get you any of these Army components, It doesn't get you

25% of any of the Army components we're about to tell you. You're going to end up with a thousand or 2000 Army soldiers manning this, which means you're going to have to do MilCon, commissaries, elementary schools, everything that goes with it. And a \$2 billion plan is going to be \$10 billion before you've taken a deep breath. And that's going to really piss people off. But I'm afraid that's where we're headed. I think they're starting to see that cost and temper themselves. So suddenly the idea we put forward last year to build a couple of VLS, and shrink the number of trailers with launchers on them, that's taken forward. We'll see what happens, whether they're willing to put Patriot out there or not, but the different systems we're talking about are going to result in a lot of people. So with that said, I think that with the budget risk that I see right now, the biggest risk is in the IFPC. We've been arguing for NASAMS for five years. I think the Army has successfully made by arguing for NASAMS both correct and ineffective; correct in the sense that we gave the NASAMS to the Ukrainians despite any whispering that it wasn't that great a system, it's done pretty well in Ukraine. We know it's a good system, so much so that the next few NASAMS sets to be built will be going to Ukraine.

RADM (Ret.) Mark Montgomery:

So to try to insert the United States into that would delay much-needed systems going to Ukraine. It may well be that IFPC can be available now, now that it's eight to 10 years behind original delivery from when they first started talking about the system to us in 2014, it's now at the point where it's delivery might be as fast as NASAMS. That's just a sad statement about everything, but I think we might have arrived there. But even given that, the president's budget on IFPC was wrong in the sense that they only put in effectors that I can see for the LRIP production, the initial four launchers, which are not for going to Guam. The 20 PDI, Pacific Deterrents Initiative launchers have no effectors that I can see with them, and they need about 360 of them.

RADM (Ret.) Mark Montgomery:

Those effectors are AIM-9xs, and the earlier you get those ordered at that kind of high number the better 'cause they compete with other AIM-9x orders to get them out so that you can have them when IFPC delivers. My gut reaction is IFPC goes IOT& E in 2025 and delivers at the battery level if we're lucky I think, the battalion level by planning in 2026, I think almost everything about IFPC's moved to the right every time I've looked at it, so 2026, 2027, 2028, you take your choice on that. So what we're not going to have is a cruise missile defense system out there. That's, of course, very necessary if you're doing important like submarine reloading operations at the submarine basin in Guam, which will not be defended by the bigger THAAD or Aegis systems that are doing SRBM and IRBM defense of the island, and so we're at real risk, I think. Also, the Aegis radar, the TPY-6 or SPY-7 radar faces themselves a risk from being attacked by cruise missiles while they're oriented to protect you from ballistic or maybe hypersonic glide missiles, so real risks there.

RADM (Ret.) Mark Montgomery:

We're really betting heavily on IFPC. How we ended up betting really heavily on a system that I like to say IFPC's the Phoenix Sons of missile defense. It's always two years away from being two years away. If we need proof of that, the Phoenix Suns tanked it four nights ago. We're at this point now where we're stuck with this. The other two issues I wanted to bring up, one is hypersonic missile defense and by hypersonic missile defense, I mean it as we've traditionally understood it, hypersonic glide missile defense, not what John Hill ascribed the other day in testimony where he moved his hands fast and said, "Sure, we do hypersonic defense." The senators, many walked away thinking, "Oh, we can do hypersonic glide missile defense." He, of course, was talking about hypersonic ballistic missile defense, which of course, we do.

RADM (Ret.) Mark Montgomery:

Most ballistic missiles end up being hypersonic near the end of flight. So please, we're talking about hypersonic glide maneuvering missile defense. For that, we have very little capability, and we're only putting about three to 500 million from what you can see in the budget into this effort. I contrast that with our hypersonic offense, which is three to 5 billion. The problem, of course, is as a democratic state who practices deterrence, we shouldn't be interested in our offense against their offense, we should be interested in our defense against their offense. If we're not spending enough on defense, it's going to be very hard to catch up. So I'm hoping that the Congress is able to find some areas to put money into this. I think there may have been some, believe it or not, unfunded on this and the MDA unfunded this, although it's hard to tell. So that's the second issue. The first issue is that defense of Guam.

RADM (Ret.) Mark Montgomery:

We struggled into it, we're there, now we just got to really bet on IFPC. The second is hypersonic missile defense where you got to get more money into it. The third is I think that Congress should be innovative and force the services to address the issue of dirigibles in an air missile defense environment. Look, it's not just that there's the proven capabilities that we saw in JLENS before it got underway and screwed up Uncle Fester's farm in Baltimore or Pennsylvania, I get that. It's just amazing to me the degree to which we will walk away from JLENS when we have airplanes that crash all the time. We have ships that don't operate as expected. We don't cancel the whole program because we're embarrassed. This was ridiculous. A persistent, capable medium to high altitude air defense radar is absolutely value added in the missile defense environment.

RADM (Ret.) Mark Montgomery:

Look, the country that invests its money smartest in defending itself against all kinds of threats, doubles down on that, Israel, they looked at JLENS and said, "Hey, that was the right idea," and they have basically reconfigured JLENS out in the desert. We need a JLENS in Guam, we probably need a JLENS in Ramstein. We probably need one in the Massar area, but let's start with Guam. Let's have the services study it. Riki, as you and I know, our SHIELDS program at USC, a group of really smart young men and women looked at this and have come up with a policy paper on it, but I think it's time for the Congress

to intervene. I do not think the services, for several reasons, one, the parochial, "I don't want to pay for it," from each service, second, the Army who probably would end up getting it, just having that bad taste of their out from JLENS.

RADM (Ret.) Mark Montgomery:

But we have got to put that aside and start thinking about, how do we get a dirigible out there that can get fire and quality track data and pass it down to all these shooters through CEC, cooperative engagement capability, or some other network? I only say CEC 'cause long before we thought about JADC2 and firing quality track data from every shooter and every sensor, the Navy for 30 years has been doing it with a system called cooperative engagement capability. A friend of mine who's an Air Force general once came up to me and asked me, "What's this tech system you guys are pushing?" I'm like, "It's cooperative engagement capability, CEC, and the Air Force has rejected it for 30 years." I get that now the Air Force has had an epiphany and realizes ubiquitous data from every sensor to every shooter is of value and the Navy's locked down on it with a CEC, but use that in the dirigible. Get that down to all the shooters and you're going to have a much higher probability of kill for that incoming massive Chinese raid.

RADM (Ret.) Mark Montgomery:

Look, for people who say the dirigibles might get shot down, yeah, B-52s are going to get shot down. B-1s are going to get shot down. Even Corky fighters F-22 might get shot down. We are going to lose lots of aircraft, lots of ships, submarines, soldiers, sailors, airmen. This is not a CT fight. This is a near peer adversary, or peer adversary in some realms. We're going to have to be able to risk things to do it. I think having dirigibles is going to help. I think having the the department take an unbiased look at it and then using existing known systems that are functional out there like JLENS or the U.S. system that's in Israel, it's a U.S. company in Israel, they have it up there, I think there's going to be real value added. It'll backstop and gap fill for the much needed E-7 Wedgetail. If I can say one thing that's a little off of air defense but is critical to this budget, I love that the Air Force finally came around on Wedgetail.

RADM (Ret.) Mark Montgomery:

PACOM's been asking for it for years to replace the AWACS with a air-breathing replacement. They came around and they did the right thing. They've done all the right things, they talk about it all the time, and then getting it delivered early is an unfunded requirement this year. That is the clinical definition of insanity, "This is the highest thing I need." Now the Air Force has to explain you have 179 billion or some high number like that budget, could you explain how every dollar is more important than the E-7, that it's on the unfunded priority list? It's something you talk about at every Senate and House hearing as a critical system that needs to be got out. In fact, you asked for and got for funding money last year for it. So I'm a little frustrated with that. That's one more thing I'd add in. It has an air defense implication, although not uniquely in the air defense system. So Riki, those are the, I guess, four thoughts I had.

Mr. Riki Ellison:

Thanks, Mark. I just want to follow up with you on the hypersonic because what we've seen is that the hypersonic glide phase interceptor is not going to be done til the early '30s. You've slowed down the HBTSS, which has got to be developed. John Hill said in the testimony that we have terminal defense in the SM-6 basically, and if we have VLS on Guam with the SM-6 or on the MRC, is that good enough to handle that threat from China until the mid-'30s? What is the overhead persistent? Is it a tower? They're putting it on towers versus what we're talking about some sort of dirigible plane? So that seems to be a lot of money sitting there, \$8 billion, and we have a vulnerability that we're not addressing rapidly to deal with unless you tell me something different.

RADM (Ret.) Mark Montgomery:

Okay, so first thing I'd say is SM-6 in a terminal defense mode enough for hypersonic? No. 100%, no. A, your SM-6 better be located at your target if you're going to be doing terminal defense with it. So that's your first problem. You want to get something that's getting them in the mid-course. You want that glide phase intercept, and you want it as fast as you can get it. If there's any unfunded money on that, that's almost criminal. I'm hoping there isn't. I'm suspecting there is. But in addition to that, we need to be pushing, this needs to be one of the places where you don't worry about, "Am I going to be yelled at next year 'cause I wasn't efficient with this money?" When you're talking about a critical deterrence busting capability from the adversary, you need to be unique and innovative and aggressive in tackling it. I just think for MDA, it's like one more mission. It's like you can't plot it along like this like you do with GBI. We're just at this point where we need to make a dynamic investment in this, and we need to be aggressive.

RADM (Ret.) Mark Montgomery:

I almost want Congress to say, "You're forgiven in advance if this doesn't go perfectly," because we got to experiment right to the point of failure on this so that we can get glide phase intercept as fast as possible. I think that's like a skillset that's practically lost in the uniform services and one that the Congress doesn't reward historically, so we got to get there. If you think back to how we first developed, Gardner, all these guys developed our ICBM systems, our Navy's SLBM systems, these were crap shows, missed first out of 15 times, over 15. If General Schreiber had been fired after five failures, he'd had been fired three times before he figured out how to build an important leg of our triad. But we don't understand that right now. I respect John Hill, but we're at the point now where MDA needs to take some risk and get out there and solve this glide phase, push glide phase intercept.

Mr. Riki Ellison:

Mark, what about the HBTSS, the sensor aspect of it? Are we much further ahead on that than the glide phase interceptor? Is that just the more resources going into that?

RADM (Ret.) Mark Montgomery:

I don't know. You're asking me like there's two guys still stuck in the track blocks and you're asking me which one's ahead? I don't know. Look, we got to invest in both of them. I don't want to make it sound like it's one system, it's an enterprise, but the ballistic missile defense, I guess I have to say it this way, otherwise it'll be manipulated by DOD personnel testifying at Congress, and it's sounding like things are okay. The hypersonic maneuvering glide missile challenge is not being met in sensors and in shooters, and we need to get that moving off top dead center and get that engine going with innovation and risk taking.

Mr. Riki Ellison:

Okay. Thanks, Mark. We got the perfect guy to answer all this. Our favorite guy are you. So ladies and gentlemen, Neil Thurgood, 37 years Army rapid acquisition. He is all over. He's won the offense, but we've got to get him back on the defense on this hypersonic issue that we're having. So welcome, Neil. It's great to have you.

LTG (Ret.) Neil Thurgood:

Hey, thanks for having me. A little delayed getting on there, so I appreciate your patience. Thanks for letting me join today. Do you want me to jump in on the defensive piece?

Mr. Riki Ellison:

Yeah, no, I want you to just give us a little bit of what you think, maybe from the Army acquisition perspective of what you would like to see in the MDA here and where the challenges are and what's not being addressed to help the nation get better with we're doing on this defense.

LTG (Ret.) Neil Thurgood:

Yeah, super. Thanks Riki and Mark, the rest of the team that's there, thanks for letting me join today. Look, at the end of the day there's a lot of discussion about acquisition reform in the big Army, which is requirements definition all the way to the death of a product. I don't think we need acquisition reform, I think we need behavior reform. The Congress has given us a set of laws that allow us to do and move at the pace that we need to move. The question is, are we comfortable with that as a DOD acquisition requirements generation community? I think sometimes we struggle with that. My last job, as you indicated, Riki, was to not change the law. My job was to behave differently and to teach and help the department learn that you can do acquisition from requirements definition to the end a little bit differently, at a different pace. There are times, and I think hypersonics is one of them, and other areas where we must behave differently. We must press harder. We must accept risk that is known and understood.

LTG (Ret.) Neil Thurgood:

That doesn't mean it's going to work all the time. That means we accept risk in a known way and we evaluate that risk. So Johnny Wolfe and I, Vice Admiral Wolfe being a dear friend of mine, we spent a lot

of time on risk decisions, and a lot of great hard conversations on some risks we were willing to accept and some risks we weren't willing to accept. But accepting that at a pace that allows you to meet the requirements of what we need as a national defense, weapons to put our nation in a position to win its war should our military be put in that position. In terms of the hypersonic defense, which I know Vice Admiral Hill's working hard on, as Mark indicated, we must press. Now is the time to step on the accelerator, not back off the accelerator. We should be asking for all the money that we need and then some because something's going to go wrong. When you accelerate programs, you don't accelerate because you think it's going to go perfectly.

LTG (Ret.) Neil Thurgood:

You accelerate with the risk of understanding where you think the potential failures are going to happen and then you react quicker to those failures, and Congress wants that. My experience with Congress in the last four years is, as long as you remain 100% transparent with them, which I was, I went over there every quarter, talked about every penny I spent, every test we did, what went well, what didn't go well, 100% transparency, then they'll ask you to press. There's some flight tests that we were public about that didn't go as well as we wanted them to. Almost every time I had a flight test that didn't go as well as we wanted to, I got a note that night from members of Congress, "Keep testing, keep going." So we have this ability in some areas, hypersonic is one of them, where we really should be pressing really hard. I know Vice Admiral Wolfe, who's still serving and my replacement, Lieutenant General Rasch are working hard at that.

LTG (Ret.) Neil Thurgood:

By the way, at the pace, when Johnny Wolfe and Vice Admiral Hill and I were all there together, we actually combined offensive-defensive learning at the same time. We don't have time to do an offensive program and a defensive program. You've got to use every test event to learn as much as you can about the offense and the defense, and that's what we were doing. We have got to put our nation in a position that if we're called on to defend this nation, that we can win the fight on both sides of the equation, offense and defense at the end of the day. So I think there's a lot of work to be done. In the language, I would encourage our defense department and our Congress to seek the dollars at the pace we need them. CRs are terrible things when you're buying equipment. They're terrible things, and we all understand why they happen.

LTG (Ret.) Neil Thurgood:

But there's an automatic ripple effect down through the chains of command, so to speak, from the Congress, the department, all the way down to the PM when the money doesn't come at the pace it needs to come or is delayed off the pace that we need. So if you put a plan in place, and a continuing resolution changes the arrival of the dollars, that changes how you can make payments to our industry partners and our labs who are doing that work, and that pace slows. So we got to really be clear on the dollars that we need and we need to be clear on the language of the MDA that those dollars need to be

treated a little bit differently and they can be under the rules of a CR, by the way. We don't have to do the cookie cutter solution, which we always tend to do as a department. We could make some programs, keep them right on track. To your point, Riki, if it's a priority, as General McConville always says, if it's a priority, then make it a priority. You don't say it's a priority and then treat it like it's everything else in the department. So I think that's really important for those perspectives, if that's helpful.

Mr. Riki Ellison:

Thanks, Neil. And as we mentioned, I believe it's only 2% of the MDA budget is on the, excuse me, the hypersonic glide vehicle interceptor. Only 1% is on an HPTSS, so that's not a big investment to get this thing, as you said, to go forward. I don't know what that figure should be, and also could you comment on where we're at from IBCS to getting a IFPC in line because that's supposed to be our next cruise missile. Mark went into it. It's still being projected out like it always has been? We lack a cruise missile defense capability right now, which the NASAM can fill, but where are we on this to get this thing moving? It's important for our country and for that aspect.

LTG (Ret.) Neil Thurgood:

Yeah, no, thanks, Riki. That's another really good question. I don't know what percentage of the budget for MBA is, those numbers are used. I assume those are correct, and I wouldn't say that the percent of budget is the right metric. What I would say is, did Vice Admiral Hill ask for the money he needed on the timeline he needed it, and was that money given? Whether that was 1% or 20% or 100%, I don't know if that's the right metric. The right metric to me is-

Mr. Riki Ellison:

Okay. Fair.

LTG (Ret.) Neil Thurgood:

... did we ask the right for the right dollar figure, and did we get that to meet the timeline that Vice Admiral Hill's been given? If that answer is yes, then he asked for the right amount.

Mr. Riki Ellison:

But if that timeline's projected out further, who puts that timeline out further? Is that the SecDef or the secretary?

LTG (Ret.) Neil Thurgood:

Yeah, that's exactly right.

Mr. Riki Ellison:

So it's not John Hill, it's that on where that projection is needed.

LTG (Ret.) Neil Thurgood:

Yeah. It might be that John Hill said, or he asked for that amount of money for the time he was given and that's what he needed. I don't know that priority. Of course, at the Sec. Def. level they're making a thousand trade-offs every day. I couldn't even speculate on the wicked hard decisions they're making from that perspective. Clearly hypersonics is a unique case where our adversary is publicly talking about their capabilities and we're working on our capabilities on both sides of that equation.

LTG (Ret.) Neil Thurgood:

In terms of IBCS, first congratulations to the Army for getting a full rate production decision. I got a lot of my own scar tissue in that program and it's really, really hard. In the construct, the services have an integrated, coordinated command and control system for the lower tier that matches the upper tier, which is C2BMC. Now the army has its piece in place to link to the upper tier, which is under Vice Admiral Hill, C2BMC, and then IBCS links into that. Remember, IBCS was constructed originally as an air defense program, ballistic missile program. Over time what we've done is we've, like we always do, because we learn as we go and the threat changes as we go, now it needs to also be a cruise missile program.

LTG (Ret.) Neil Thurgood:

We've added mission sets to it because the threat has changed, which is appropriate and the right thing to do. Congratulations to General Lozano for getting that to a full rate production decision. Now they'll start fielding that, and they'll start fielding that in a sequence that all the other existing systems that are air defense or counter UAS systems that are command and controlled by FAAD C2 or AFATDS, they have to keep working until the whole IBCS program is fielded. We should anticipate, rightfully so, that we're not going to snap our fingers and everybody's going to be IBCS instantaneously. It's not going to happen that way. It'll happen over time, unit by unit as we field that.

LTG (Ret.) Neil Thurgood:

The other part of that is this, the idea of a ubiquitous network that's everywhere all the time is also not ready yet. We have to still be in a position where individual weapon systems, particularly in the ground force, have to operate in austere locations, independent of the network. An IBCS can do that at the air defense level. We need to roll into that stuff like IFPC that you're talking about, the mid-range SHORAD, both kinetic energy, directed energy, all those have to be rolled in.

LTG (Ret.) Neil Thurgood:

In terms of IFPC, there's three parts to that, three parts to that program. It's the kinetic interceptors, which you referenced and today we have NASAMs. We bought iron domes to help fill some of that gap. The army has a timeline to do that. If I was out of the fire center, General Lozano talked about that. Now that they have a full rate production decision for IBCS, then they'd simply have to make the decision in

the next two years or three years, how quickly do I want to roll IFPC into IBCS, or do I want to keep it in the FAAD C2 domain? That's the decision General Lozano and the army's going to have to make. They're probably in the process of making that decision.

LTG (Ret.) Neil Thurgood:

Remember the IFPC is a kinetic energy killer, a directed energy killer and a high power microwave killer. Anytime you're talking about air defense in the terminal phase, we want to talk about that in terms of layered defense. Kill things as far away as you can, and keep killing them as long as you can until they're on you. Having the ability to kill kinetically with directed energy in terms of high energy lasers and directed energy in terms of high power microwave is all part of that layered defense strategy.

LTG (Ret.) Neil Thurgood:

Similar, the army has chosen an approach. They did that with Iron Dome. We have NASAMS today that we're using in our defense structure. If IFPC, for some reason, on the KE side or the DE side stumbles, then we might want to consider, as a nation, fill in more of what we have. It may not be the best solution, but as I used to tell everybody all the time, killing one thing is better than killing no things. If we have a system, it may not be optimal, but it can kill a cruise missile, then let's get that out there until the thing we really want we can get out there at the pace of speed we need to.

Mr. Riki Ellison:

That's the NASAM argument, basically, until that comes out. Mark, do you have any questions for him? I know we're a little over time, but I want to go over to you Mark and then open up the questions from the audience. Thanks, Neil.

RADM (Ret.) Mark Montgomery:

We talked the other day. I agree. I feel a little better about IFPC knowing there's a potential to use FAAD C2. It's not that I don't believe that IBCS will someday be available, but I think it's starting to stitch together the three signs of the cross, to do IFPC and IBCS in 2026. If I felt that I owed the PACOM commander a low cost, low E cruise missile defense system in 2025, I'd be betting on an IFPC in 2026. I wouldn't bet on IFPC plus IBCS. I think that's probably the right thing to do, and that's because IBCS has other responsibilities. There's working on LTAMDS and FAD planning and things like that that's going on. I just don't want to get it dragged into something else.

RADM (Ret.) Mark Montgomery:

I know FAADC can use Link 16, Link 11, JREAP all the kinds of typical systems that we integrate. In fact the big SPY7, TPY6, the same thing, radar. Looking, we'll see something or the bridge I talked about or an E7 or an E2D, pass it down to the Aegis web scroll system which will push it out through the JMTC or just directly through Link 16 to the FAAD C2. The FAAD C2 goes from being AA to AAA, or AAA to major

league. All systems work like that. Two DDGs working together work like that. They take themselves from AAA to major league by operating that way. I'm a fan of that.

RADM (Ret.) Mark Montgomery:

Yeah. In general I think we're in violent agreement. My only worry is if this stuff slides, there's limited value in having a wicked good SRBM, IRBM, hypersonic glide missile defense system in Guam if you can't take a crap ton of cruise missiles coming at you, because if there's one thing that Chinese have, above all others, it's a crap ton of cruise missiles and launching systems, whether it's air launch, submarine launch, surface launch or ground launch. They've got them all and they've got them all in numbers.

LTG (Ret.) Neil Thurgood:

Yeah. It's an interesting point, Mark. Colonel Hill, the great PM down there in PO missiles space working for General Lozano, they're having that discussion right now about that very point that we're talking about. A year ago if you had a conversation about MSHORAD or IFPC into IBCS, the answer was no, because we weren't at the point where we got to a full rate production decision. Now, they're at that point then they're having those conversations. When is the right time to cut in and will it be mature enough? Because we're going to learn IBCS. Every time we field a new piece of equipment, we learn a lot. It's super great. Those conversations are going on and that will be the first part.

LTG (Ret.) Neil Thurgood:

The second part is to remember all the air defense systems that are out there now, speaking of FAAD C2 today fundamentally. They've got to be rolled into this. How do you do that? Do you federate it into the system or do you integrate it into the system? Do I put a wrapper around it and keep it kind of as a FAAD C2 with a wrapper and have the interface that way or do I fully integrate it into IBCS. I know Chris Hill and his team are having those conversations, but it's really important in the timing. To your point, mark, the COCOMs get a big vote in the timing of fielding of that equipment and it's capabilities. That'll all play into the discussion.

Maj Gen (Ret.) Charles “Corky” Corcoran:

Hey, Riki. I'd like to pile on real quick on the NASAMs. Some good points have been made here. I just want to just reinforce that NASAMs has proven itself, period, in Ukraine. We're looking at it for other places. We can't get it fielded soon enough, but as far as the 24 NDAA, as we try to accelerate fielding NASAMS in other areas, realize that's competing for resources that the Navy and the Air Force uses on their airplanes in the way of AMRAAMS and so again, Congress could help out here by putting some money towards that and putting some emphasis towards getting the resources we need so that we can fully outfit, not only the NASAMS batteries that we're going to field for ourselves and some key allies or partners, not only the fire control systems, et cetera, but also the missiles. We've got to have more effectors as soon as possible. Over.

Mr. Riki Ellison:

Corky, I'd like to ask one question we didn't ask. Over the five years, is boost-phase missile defense from aircraft on sorties after the first ... Say for North Korea. For North Korea, is that viable? Is that worth investment in for development to do something like that, or is that just not applicable?

Maj Gen (Ret.) Charles “Corky” Corcoran:

I don't think it's the best place to put resources, Riki. Specifically if you're talking about mobile launchers inside a highly defended area, you've got to be in the exact right spot when that thing launches to get it before it exceeds the capability of whatever effector you have on the air platform that's close enough to try to get after it. I think there are better ways, starting with having policy to take out launchers if you find them before they launch and then after that, having the sensors that Mark was talking about, the effectors that you and Mark and Neil have been talking about to hit them in the glide phase.

Mr. Riki Ellison:

Okay. As you look in the future, that opportunity, whether it's in space in that launch period doesn't have to be aircraft, it could be something else, but that seems to be a very cost-efficient way to deal with this problem.

Maj Gen (Ret.) Charles “Corky” Corcoran:

Yeah. I wouldn't rule anything out. I wouldn't rule anything out. Yeah.

Mr. Riki Ellison:

Neil, would you want to say anything on that, because you understood the ABL as we built that and where possible future capabilities ...

LTG (Ret.) Neil Thurgood:

No, it's a really good point that's been brought up. From an operational perspective, it's always better to kill a missile on the ground if you can. Never let it get there. That's the start point of any kind of conversation. Then you get to the realistic outcome of that. Particularly with mobile transport erector launchers. How good will our intelligence be on the buildup and the movement of, and then to the location of the movement. Then how much time will we have from the TEL launch process, the missile launch process on a TEL? Can we get an effector there in whatever means, a ground means, an air means, a sea means whatever we can. Can we get the effector there fast enough that they can't get the missile off the rails before your effector gets to the missile?

LTG (Ret.) Neil Thurgood:

I think the thing that is challenging for us is technology is to the point now where the ranges of missiles are becoming so long that you can do a lot of those launches from very secured, sequestered positions, which makes it even much harder. That works on both sides of the equation, us to kill their offensive

weapons and theirs to kill our offensive weapons. So, I think it's really hard. I think we have to ... The other principle of war here is we got to have more than one way to kill the enemy. You just can't put all your eggs in one basket. You've got to have multiple ways to do it. That kind of gets, Riki, back to your question about the priorities and how those priorities get made and those are wicked hard trade-offs. I hope that that's useful. Over.

Mr. Riki Ellison:

Mark, I'm going to hand it over to you on any Q&A or final comments.

RADM (Ret.) Mark Montgomery:

Good. Well, look, all the questions that were pre-sent to us got answered in the discussion. That was good. One of the ones that was just sent in is ... I'll take it, I'll answer it and we'll just wrap from here. It says, "If we found ourselves in an enduring conflict, would we have adequate systems and manufacturing to carry out a long term multi-front war?" No. All right. It's a pretty simple answer. I'll say, we did this to ourselves. We all understand that factories have minimum sustainment rates and maximum available rates. We tend to brief the maximum available rate. We hear that. They can build a hundred LRASMs a year. Well, the minimum was 20 and we ordered 20 for five years straight. What the company does is, and I'm making this up, this isn't the LRASM, but in general in munitions, they lower the workforce down to your consistent ordering rate. If you consistently order 20, they build a workforce for 20. They would not make money, as a company, if they built a workforce for 60 and you're only ordering 20.

RADM (Ret.) Mark Montgomery:

Unless, you have a defense production agreement with them, of which there are a handful, but not for this, to maintain the capability which we're not drawing on, then basically the company, the minimum sustainment rate becomes the maximum available rate. Now, when we want the maximum available rate, we need to plunk down money. We're doing that, last year there was a whole bunch of stuff done in the NDAA and very little of it was funded directly into probes. One of the ones that was several hundred million dollars to basically go to primes to move that minimum sustainment rate production more towards maximum of available production or even more.

RADM (Ret.) Mark Montgomery:

This year's 24 budget, I think, would be characterized as we built as many missiles as we can, we asked for multi-year authority to buy them and we put more investment into raising that minimum number you can build. This is for Javelins, 155, LRASM, SM-6, a few other systems like that. You're seeing this. The answer is we're not there. There are things we can do policy-wise and appropriation wise that will get us there. None of them will get us there tonight, or tomorrow, or next year. It took us 30 years to dig this hole, of poor munitions, of making munitions the bill payer. It'll take us some number of years to dig ourselves out of the hole. But the good news is, you see a lot of shovels around and a lot of people

committed to the effort. I think we will, but you've got to ask this question again in three years to get a straight answer.

Mr. Riki Ellison:

All right. Thanks, Mark. Let's just wrap it up. We'll start with Neil. What would you like to see in that NDAA 24 as a must do? Just one or two things from this conversation and from your thoughts?

LTG (Ret.) Neil Thurgood:

Yeah. I think the NDAA can help us in a couple of broad ways. Number one is be very, very clear with the money on the priorities and specify those priorities in the language, because the further you go down, the priorities of the services might change and those dollars might be reallocated somewhere. Not because of an evil thing, they're all trying to make the right choices, but I would be very careful with how we address and allocate the dollars and put them in the right PEs and use those PEs appropriately.

LTG (Ret.) Neil Thurgood:

The second piece is, I'll just pull the last string that Mark talked about. Our industrial base is going to respond to ... Because of the way we created the industrial base since the 1950s, we've really got to get to what I would term as the next generation prime. We've got to do that in munitions in particular. We've been building munitions the same way for 60 years. We've got to look at new technologies and new methodologies. The government can help that, NDAA language can help that by allocating dollars for industrial based development and changing the way we do things. This technology is certainly available. I would encourage, if we want to have munitions available at the pace we need them, in high order conflict, then we can't make them the same way we've made them since 1950. We've got to change how we make things and look at things, and industry needs government help and congressional help to do that. I think the NDAA language can help with that. Thanks for letting me join today. I appreciate it, Riki. Thank you.

Mr. Riki Ellison:

All right. Thanks, Neil. Corky?

Maj Gen (Ret.) Charles “Corky” Corcoran:

Yeah. Thanks, Riki. Thanks Neil, Mark and John, who was on earlier. I think Neil nailed it. It was basically a recap of my comments earlier. We've got to fundamentally be very directed, from a congressional perspective, and try to change the way we do business. Thanks, Riki.

Mr. Riki Ellison:

Thanks, Corky. Mark?

RADM (Ret.) Mark Montgomery:

Yeah. Just what I said, get hot on hypersonics, fund the E-7, get some honest answers back on the value of dirigibles. On the defense of Guam, look, we ended up in the least effective, most expensive, slowest plot process. Don't screw it up anymore. Knuckle down, get it done. If IFPCs the right thing, then go with FAAD C2, then go with that. If there's any chance that there's slippage in that, then take a hard look at whether you can pull NASAMS without upsetting the Ukraine apple cart.

Mr. Riki Ellison:

Thanks, Corky. Mark?

RADM (Ret.) Mark Montgomery:

Yeah. Just what I said, get hot on hypersonics, fund the E-7, get some honest answers back on the value of dirigibles. On the defense of Guam, look, we ended up in the least effective, most expensive, slowest plot process. Don't screw it up anymore. Knuckle down, get it done. If IFPCs the right thing, then go with JADC2, then go with that. If there's any chance that there's slippage in that, then take a hard look at whether you can pull NASAMS without upsetting the Ukraine apple cart.

Mr. Riki Ellison:

Thanks, Mark. Thank you, gentlemen. Great conversation. I would go back to the fundamental opportunity that we have today to change policy. There's no time better, in the last 30, 40 years, than it is today with the threat from China and from Russia to change our policy, to enable us to do the capacity and development and capabilities to best deter a conflict between now and 28 for sure, but beyond that. That policy is key to be rewritten, fixed, so we can play in the game that we need to be able to play in. I think the capabilities will come underneath that in priority and certainly we have to turn it up, on hypersonic defense. We've got to turn that thing up. I would also say, we didn't talk much about it today, but the NGI also needs to be pushed to 27 and getting that thing out and fielded as well for that North Korean threat.

Mr. Riki Ellison:

Ladies and gentlemen, thanks for the time. I appreciate each one of you for contributing and furthering the advocacy and, most importantly the education to our nation on this specific topic. Thank you.