

April 22, 2025

Featuring Bradley Bowman, Lydia LaFavor, and RADM (Ret.) Mark Montgomery

Moderated by Paul McLeary

Introductory remarks by Cliff May

Transcript has been edited for clarity

MAY: Welcome and thank you so much for joining today's event, hosted by the Foundation for Defense of Democracies, FDD. I'm Cliff May, FDD's founder and president. It's Tuesday, April 22nd and we're pleased to have here for this conversation, some in person, some tuning in live, some listening to our podcasts. Thank to all of you who are participating.

Our topic today is growing missile and drone threats and how we should respond. In its annual threat assessment in March, the US intelligence community expressed concern about the growing missile arsenals of China, Russia, Iran and North Korea that they form a block, what we've been calling for some time here at FDD, an axis of aggressors. The assessment said that China, for example, is, quote, "fielding a wide variety of new missile systems designed to strike U.S. forces and bases, as well as our homeland."

Russia is undertaking similar efforts. North Korea, for its part, is continuing, quote again, "to prioritize efforts to build a more capable missile force from cruise missiles to ICBMs and hypersonic glide vehicles designed to evade US and regional missile defenses, improve the North's precision strike capabilities and put US and allied forces at risk."

Again, that's according to the assessment. Meanwhile, our intelligence professionals said that Iran, quoting again, "continues to bolster the lethality and the precision of its domestically produced missile and UAV systems and it has the largest stockpiles of these systems in the Middle East." So with growing threats we cannot stand still on missile defense.

That's why FDD is launching today a new Air and Missile Defense Program within our center on military and political power. Taking advantage of expertise across our entire research institute, FDD has been conducting air and missile defense research for years, as you can see in the articles that are in the lobby. But the program will expand and further deepen existing efforts by conducting rigorous and timely research regarding the air and missile defense capabilities necessary to protect the United States, its forward deployed forces, and its allies and partners from adversary missiles, aircraft and drones.

This mission is informed by the fact that the development, procurement and fielding of cutting edge air and missile defense capabilities in sufficient quantities by the United States, by our NATO allies, Israel, Taiwan, Ukraine, Japan, South Korea, Australia, and others can bolster deterrence and better defend us and our allies from growing threats.

As part of the launch for this new program, FDD's website now includes an air and missile defense resource for decision makers, for reporters, and others that include details on capabilities, on components, on manufacturers, development status, operating countries, and performance for 26 American allied and adversary air and missile defense systems as well as related research.

I highly encourage you to check it out. A lot of very good, useful, interesting information there. To discuss both the air and missile defense threats and how we must respond, we have a distinguished panel of experts today who will form the heart of our new program. That includes Bradley Bowman, Mark Montgomery, and Lydia LaFavor.

Bradley Bowman serves as senior director of FDD's Center on Military and Political Power and is co-director of FDD's new air and missile defense program. He has served as a national security advisor to members of the Senate Armed Services and Foreign Relations Committees as well as an active duty U.S. Army officer, Blackhawk pilot and assistant professor at West Point.

He spent nearly nine years in the U.S. Senate, including six years as the top defense adviser to Senator Kelly Ayotte, then senior Republican on the Armed Services Readiness and Management Support Subcommittee. He served more than 15 years in active duty as a US Army officer, including time as a pilot, company commander, and staff officer in Afghanistan and on the Army staff in the Pentagon.



FDD's Air and Missile Defense Program Launch

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Rear Admiral Retired Mark Montgomery serves as senior director of FDD's Center on Cyber and Technology Innovation and co-director of FDD's new air and missile defense program. Mark served for 32 years in the U.S. Navy as a nuclear trained surface warfare officer, retiring as a rear admiral in 2017.

His flag officer assignments included director of operations at U.S. Pacific Command, commander of Carrier Strike Group 5, embarked on the USS George Washington, stationed in Japan, and deputy director for plans, policy, and strategy at U.S. European Command. He served in the National Security Council from 1998 to 2000 and as policy director for the Senate Armed Services Committee under the leadership of the late Senator John McCain.

Rounding out our panel today is Dr. Lydia LaFavor. She serves as a research fellow at the Center on Military and Political Power and will be one of the key experts supporting FDD's Air and Missile Defense Program. Prior to joining FDD, she served in the United States Air Force for seven years as an intelligence officer. Her time in active duty included deployments to the Horn of Africa and Afghanistan in support of Air Force Special Operations Aviation and an assignment in the Republic of Korea to support – in support of – Air Force Conventional Aviation Operations.

She earned a doctorate in history from Auburn University. Her dissertation research encompassed the origins of the Russian aerospace defense industrial base, infrared-guided tactical missile development and transnational air defense techno-politics.

So Army, Navy and Air Force. We've got the land, sea and air covered.

In addition to these three other experts who will continue to work on – to contribute to the work of FDD's Air and Missile Defense Program include senior research analyst Ryan Brobst, research analyst Jack Burnham, Russia Program deputy director John Hardie, research analyst Cameron McMillan and Iran Program senior director Behnam Ben Taleblu. Several of them are also here today.

Moderating today is Politico Pentagon Reporter Paul McCleary. Paul previously served – or covered the Pentagon, the Armed Services and NATO for Foreign Policy, Defense News and Breaking Defense, and he has embedded with the U.S. forces in Iraq, Afghanistan and Syria. He was in front of many of the hot-button issues in the U.S.-led effort to supply Ukraine with weapons, breaking news on internal White House and Pentagon negotiations over sending fighter planes and long-range weapons to Kyiv.

Before we begin, just a couple of words about FDD. For more than 20 years, FDD has operated as a fiercely independent, nonpartisan research institute exclusively focused on national security and foreign policy. As a point of pride and principle, we do not accept foreign government funding. For more on our work, please visit our website at fdd.org, follow us on X and Instagram and subscribe to our YouTube channel. We're everywhere.

Paul, the floor is yours.

MCLEARY: Thanks so much, Cliff. Thanks for joining us, everyone.

I think, you know, you starting this missile defense program comes at a very auspicious time, as we've seen in the Red Sea, in Ukraine and in Israel over the past three years, a lot of the missile defense debates that we've had and, you know, the development – the developmental programs that we've had have gone from kind of theoretical or testing to real-world. We've seen what works and what doesn't work in very kinetic, real-world environments, right, from knocking down Iranian drones and missiles over the Red Sea, to knocking down Russian and Iranian drones and missiles in Ukraine. So there's been a lot, and we now have a better sense of what this landscape looks like, right? It's out of the world of theory into the real world. We know what works and what doesn't.

So Brad, I guess we can start with you. So I guess I've teed that up for you.



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BOWMAN: Yeah.

MCLEARY: So why now? What was the impetus for creating this program now? And what do you hope to grow this into becoming?

BOWMAN: Well, thank you, and thanks for moderating, and thanks to everyone for being here, and it's a real honor to be with Admiral Montgomery and Dr. LaFavor here on the stage. And we are really excited about this new program. FDD, as Cliff said, has done research and publications related to air and missile defense for a long time, especially after we established our Center on Military and Political Power in 2019, and Admiral Montgomery and I have published more times than I can count on these issues.

But quite some time ago – I don't know, maybe more than a year or so ago now, we – we talked that we really wanted to deepen and broaden our work and consolidate it and make it more accessible to folks, given what we are seeing our adversaries do and what we're seeing happening in Ukraine, and also in the Red Sea, as you talked about. And so we really want this to be true to FDD's status and character, to take a nonpartisan, serious, substantive, detailed look at the air and missile defense capabilities that our nation needs to address what we genuinely believe are growing threats.

If you look at China, Russia, Iran and North Korea individually – and Cliff mentioned some of the quotes from the Worldwide Threat Assessment – each one of them is doing things that are very, very concerning and some of this, as you've said, this is far from theoretical. This is far from classroom stuff. We're confronting the most serious assault on maritime shipping in decades in the Red Sea, conducted by a terrorist organization that is receiving many of the assets from Iran.

So – and we're seeing the worst war in Europe since World War II, where precision-strike capabilities, whether they're missiles or drones, are being used in great number to devastating effect. And we're seeing with China the most significant, robust, aggressive, significant military modernization effort since World War II.

And so what I'm painting a picture, I think, informed by what our intelligence professionals have said in their recent testimony, is individual partners that have more capacity, capability, readiness in terms of missiles, cruise, ballistic, hypersonic, and also drones individually. And then, we're simultaneously doing this project that Dr. LaFavor's helping to lead within our center that spans our whole research institute on the Axis of Aggressors. We see each of them working together.

And we've looked at, just within our center alone, five categories of cooperation among these four: weapons development, weapons proliferation, intelligence sharing, military diplomacy, and military exercises, and what we're seeing is that these very formidable capabilities that each of them are developing, they're increasingly sharing them with one another, and that's allowing each of them to become more capable in their ongoing and prospective theaters of aggression, and it's bringing up the junior partners.

And I see Behnam Ben Taleblu, who's, frankly, the best in D.C. on these issues with respect to Iran. It's making North Korea and Iran be able to acquire capabilities more quickly, in a matter of months or a few short years, that it would've taken them a decade or more.

So you put all that together, I think we confront extraordinary times where our adversaries have concerning capabilities to not only target our forward-positioned forces, but also our homeland. And I worry that their belief that we can't cope with that the way we want, they know that we know that we've got serious problems in defending, for example, our bases in the First Island Chain, or even defending our homeland, is going to make them more likely to conduct the aggression.

So from a deterrence perspective, and if deterrence fails, from an American lives perspective, I think this is urgent, and I think our program's coming at a good time.

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MCLEARY: Thanks.

And Mark, as I said in the opening, you know, we're learning a lot from watching this, but I think – I would say our adversaries are learning a lot too, right? Where the gaps are, where they can try to find seams in the coverage, things like that.

So the – this program you're launching, I mean, how do you – how are you going to balance that, right? What we're learning what they're learning, what we know they're learning...

MONTGOMERY: It's – no, I agree. First, I agree with everything, how you described the problem and how Brad answered your question.

Fir- – OK, it's core level. The reason we're doing this is the adversary voted, right? The adversary voted in Russia/Ukraine, in the Red Sea, in Iran/Israel. The adversary's voting, continuing to use cruise, ballistic, and, if they can, hypersonic missiles and drones against democracies. And so we want – you know, we felt this is a rich area to study, and we've got to get exactly those gaps.

When the adversary voted, our munitions levels were extremely low. When you look at AMRAAM, which is the missile that goes on the – on the NASAMS launchers; PATRIOT missiles; the SM-2, SM-6, SM-3 missiles; ARROW missiles in Israel; we are at unnaturally low low levels of inventory.

I mean, Israel swore up and down for 50 years that U.S. forces would not go into Israel and defend them. Today, a U.S. THAAD battery is in Israel defending it. Why? Because they're short ARROW missiles and the THAAD fills the gap. I mean, we don't like to say this out loud too often but that's a simple fact.

Our – we have expended more SM-2s and SM-6s than we have procured this- – in the Red Sea – than we have procured this year. In other words, we've plussed up in the light of the Russia/Ukraine incident, we've plussed up our munitions everywhere, which was a good thing. Russia/Ukraine had a silver lining. It told us our munitions were low.

We plussed them up – we plussed them up and we immediately expended them all on a ragtag bunch of terrorists, you know, using, you know, flimflam weapons, you know, that cost \$10 to \$40,000 – you know, \$2 to \$40,000 a piece, and we're engaging with \$1 million and \$2 million and \$3 million missiles, and – and we're then bombing them into – in rubble events instead of holding Iran accountable.

I mean, missile defense is creating problems for the United States. So this program looks at adjusting all – addressing all of those issues.

I'd also say one other good thing – our timing is perfect. President Trump agrees with us. We have a President elected – his description of an Iron Dome on the campaign trail was rhetorical at best. I mean, we're not buying any Iron Dome. We don't have – I don't believe at this point Canada or Mexico are going to mortar us, although keep it up and we might be there.

So we don't need Iron Dome but we need a concept, a vision of defending the United States against these cruise and ballistic missile threats. And so I think they shifted the name to Golden Dome for that reason. I'm not a big fan of Golden Dome either. I don't put golden klitsch in my office. But, you know, the – I do think the President's onto something.

And then here's the final beauty – Congress agrees, and we're going to do \$100 and – probably \$150 billion reconciliation. I think it's going to be split fairly evenly between shipbuilding, missile defense, the nuclear enterprise, and restoring readiness, and the border. And so in theory, \$30 to \$50 billion could be flowing on top of the normal service and Missile Defense Agency budgets.

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So our program's coming out because the threat is there, because the gaps are being identified, and because the President has said he has a vision for how to start to address this. So our timing is perfect.

You – if I could add one thing, why FDD? Look, we make it pretty clear – Cliff said it upfront – we don't take foreign money, our centers don't take U.S. government money, we don't take corporate money – you know, defense industrial base money.

So when Brad and I say or Lydia say – well, when Lydia says something, it's always right – but when Brad and I say something, if it's right, it's because we believe it, and if it's wrong, it's because we're wrong, not because a – you know, a major prime asked us to say or curb our thoughts. You're getting the full deal for – you know, you're getting full transparency from us.

So we're looking forward to this. I think there's going to be a lot of balls and strikes to call over the next two years.

MCLEARY: Thanks. And Lydia, to move to what has generally been seen as the biggest threat, I mean, outside of North Korea, I guess, Russia. You've spent a lot of time and done a lot of research on Russian tactical missile development and programs. What have you seen in recent years that concerns you the most in – in what the Russians have been doing?

LAFAVOR: Thank you so much for the excellent question. As you mentioned, my background is more in studying the Russian and formerly the Soviet defense industrial base, and I lean heavily on our colleagues from all the country programs here at FDD for their specific country expertise in China, Iran, and North Korea as well.

With respect to Russia, I think one of the – what we've sort of identified in the Axis of Aggressors project [that Brad Mentioned] is that there's a degree of seniority and maturity to some of these relationships. So if you look at the bilateral relationships and you try to evaluate which ones are driving the overall construct, the Russia/China dynamic is the most potent and has the most long-term consequences in terms of technological development and cooperation between the defense industrial bases.

So I would argue that that's the least transactional. It's very common to hear Department of Defense officials, government representatives speak and describe all of these relationships as strictly transactional; if it wasn't in some kind of mutually beneficial relationship, that they wouldn't participate in whatever that action was.

But I think that those relationships can evolve over time, and we should be careful with just carte blanche describing all of these as strictly transactional, that perhaps it's better to be a little bit more nuanced. Are we in a – you know, in the sine wave of relations – are we at a transactional point or are we at a more transformational point perhaps in the technologies and the co-development, co-production relationships that are taking place between all four defense industrial bases across these six bilateral relationships and then their trilateral cooperative events as well?

So specifically, I tend to focus on the aerospace sector. Because of my background, that's where my research has been strongest and where a lot of my original research stems from.

I think with respect to the Russia/China dynamic, you really have to consider that, at some points, some of the advanced fighter aircraft transactions that took place between Russia and China were strictly transactional.

And some of those took place in periods of extreme economic duress for the Russian Federation as it was resurrecting after the collapse of the Soviet Union. And then there were periods of downturn where there was less cooperation because China – or because Russia expressed dissatisfaction with some of the theft of intellectual property.

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But not every form of transaction that's taken place can be strictly categorized as that. So I would just recommend that what we're seeing today is actually more habitual, more cyclical than just strict transactions. I think it's unhelpful to think of this in terms of, like, "Well, I'm going to go to the grocery store today. I value this at X dollars or rubles or yuan, and so I'm going to, you know, purchase this because this is what I value it as."

I think that they're transacting in certain aerospace, and that includes not just advanced fighter aircraft, transport aircraft, airborne control, but also in surface-to-air missiles over time. And those have come at periods of significant upturn in the relations between both of those, you know, more senior partners within the Axis of Aggressors.

MCLEARY: Do you see this as being maybe more collaborative? I mean, do you think – how deep do you think the collaboration goes – or that the Chinese and the Russians are learning from each other and sharing technologies and further – probably loathe to share some of their – you know, their highest technology, but still.

LAFAVOR: I think that's a really great point. So, for all of the discussion about a no-limits friendship or no-limits partnership, there are some real limits or there have been periods of limitation in what they have transacted.

There's also been some signals at certain points in time, particularly coming out of the Russian Federation, that suggest to me, you know, whether or not the rhetoric matches the reality, that they're trying to signal the depth of the relationship.

Around the 2018/2019 time frame, Vladimir Putin referenced in a discussion at the Valdai Discussion Club that Russia was providing the technological know-how or open to collaborating with China on a missile warning system. That was only a category of weapon system that belonged to the Russian Federation and the United States at that point in time. So what are we to make of it? Should we not take him at his word? I think within government channels, that's the responsibility to really evaluate where the reality meets the rhetoric.

But at the open source level, it's important to take seriously what they're trying to signal and to continue to evaluate that on sort of a spectrum or kind of a sine wave of collaboration.

MCLEARY: And Mark, putting on your old PACOM hat, taking a look at North Korea and China, right? I mean, North Korea, didn't mention up at the top, but they're also helping the Russians, right? And they're getting something in return.

MONTGOMERY: Yes. First, Lydia described the nature of the relationship perfectly. I do think it's harder in missile defense. I think each country went on – China and Russia, years ago, went on their own paths, and China very openly. China was not constrained by the intermediate nuclear force treaty. So they began to develop these weapon – land-based long-range attack weapons much earlier. We – all of us remember or at least in the Navy remember eight, nine years ago, the kind of – the advent of the carrier-killing, you know, anti-ship ballistic missiles.

And they've certainly placed everything inside the First and Second island chain at risk. They did that separate – Russia was doing their own program but they were doing it in violation of the INF secretly and quietly. So I really don't think there was much sharing there. So as opposed to, say, could they provide quieting technology for submarines? You bet. They could be doing a transition thing.

But in missile defense, I really think they developed reasonably separate – and missile attack, they developed reasonably separately. They have shared some technology along the way. But China is on its own now and it is pr- – it is the pacing threat, developing the most dynamic cruise missile, hypersonic missile, ballistic missile threat chain that places, as I said, everything inside the First and Second Island Chain at risk.

What's unique now is we're starting to see that they're developing weapons that can place the homeland at risk with conventional warheads. And this is – this won't – we don't know if this falls under mutually assured destruction, if you hit me with conventional warheads in San Francisco, do I start a nuclear exchange that costs 800 million people their lives? Probably not.

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So those weapons are longer-range weapons. It's their ability to get systems like aircraft, submarines, and ships farther and farther from their coast safely to launch weapons. It's weapons with extremely long range because of their – how they are powered, how they fly, you know, hypersonics, and in – and in the case the Russians, they have gone with nuclear – potentially with small nuclear reactors inside weapons.

So basically, it's transitioning from a threat to our forward deployed forces to a threat to the homeland. So China really is this large pacing threat with an industrial base that can crank them out. And they don't have this little problem Russia has of expending them in combat right now, right? So Russia's building a lot of missiles, they're firing a lot of missiles. China's building a lot of missiles, they're storing a lot of missiles. So China is the biggest problem for us, the biggest threat, and one that we'll write about a lot.

North Korea, ironically, is the one that we've spent the most time building things against for the last 15 years, yet they're not the biggest threat. They, what they are, is country most likely to go crazy and fire something at us. So they have nuclear weapons, we say anywhere from 22-plus nuclear – potential nuclear weapons. And they have ballistic missile capabilities. And they can certainly place South Korea, Japan, and even parts of the United States at risk. As a result, South Korea, Japan, and the United States saying, here is a country that has the capability and apparent kind of wildcard willingness to use it. We've got to prepare for this.

So the missile defense reviews that we've done for the last 15 years, that's a congressionally-mandated Department of Defense completed report about every four years, has always emphasized defending against this ballistic missile threat from North Korea. We have spent a lion's share of the Missile Defense Agency's budget over the last 15 years building a ground-based deterrent, that's located in California and Alaska against this threat.

What President Trump has said is, I want more than that. What we're going to argue for our program here is, we need more than that. We need to start thinking about something other than the nuclear threat – the ballistic missile threat with a potential nuclear warhead on it from North Korea.

We need to think about Iran. We need to think about China. And we think about Russia in terms of how they pose threats to the U.S. homeland and U.S. forward-deployed forces. So kind of I look at it, China is the biggest pacing threat. North Korea is probably the craziest threat that has a ballistic missile plus weapon. By the way, Iran is competing hard for that title. And there – you know, there's a lot of discussion about how you prevent that from happening. I will say this, it's damn expensive once somebody gets it. We've spent a metric butt-ton of money on this North Korean threat because we didn't eliminate it prior to it evolving into an existing threat. So that's how I look at those two countries in Asia.

MCLEARY: OK. And then, Brad, Iran.

BOWMAN: Yeah.

MCLEARY: You've spent a lot of time working on Middle East issues.

BOWMAN: Sure.

MCLEARY: I would just say, all these countries are free from a problem that the United States has on some level, where we have this kind of almost firewall between commercial industry and the defense industry, right? There's not a ton of back-and-forth where those countries can manufacture on-demand, right?

BOWMAN: Yeah.

MCLEARY: They can say, this factory is going to make...

BOWMAN: Yeah, yeah.

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MCLEARY: ... this radar system or – or whatever. We don't really have that, right?

BOWMAN: Yeah.

MCLEARY: The Lockheeds and Raytheons are huge companies with the capabilities, but it's still different, somewhat easier, I guess, to have that demand economy. So what do you see coming out of Iran and what they've been doing and what – what they've been learning...

(CROSSTALK)

BOWMAN: Sure. Thank you. And just tying it to Mark's points about North Korea. You know, during my six years serving as Kelly Ayotte's adviser on these issues, we really focused a lot on trying to argue that we needed an additional ground-based mid-course defense site here in the United States so that we would have a shoot-look-shoot capability against Iran should they ever field an intercontinental ballistic missile. Because our assessment at the time was that because, frankly, it's not a partisan comment, it's just a fact, because of cuts to air and missile defense in the Obama administration, we were playing catch-up on North Korea.

And our point was, hey, that's suboptimal. Let's get ahead of the Iranian threat and make sure that we have a shoot-look-shoot ability to shoot at it, assess whether you've hit it, and then shoot again if necessary should Iran ever field an ICBM targeting, oh, I don't know, our nation's capital. You know, wouldn't that be nice?

And so that was what we were – that was kind of our motivating thing. A lot has changed since then. The threats have, frankly, grown worse. We have some additional capabilities. But when you look at Iran, and, again, Behnam is the best in town on these issues, and if you haven't – everyone who hasn't read his monograph on Iran's ballistic missile program, I highly recommend it. But as he knows well, many of you may know, and as the DNI said in their worldwide threat assessment testimony, Iran has the largest missile inventory in the Middle East and they have been working for many, many years to improve its accuracy, its reliability, its lethality, and its range.

And in range, also, they have been developing, working on the space-launch vehicle program. And I remember sitting in the hearing room of the Armed Services Committee, DNI Clapper at the time saying they're using their space-launch vehicle program to create capabilities that will be useful to the fielding of an intercontinental ballistic missile. So the world's, my words, not his, leading state sponsor of terrorism would have the means to directly hit our homeland. So – you know, so that's what they're doing. And so they have the largest inventory [of missiles in the Middle East], they're advancing their SLV that's useful for fielding an ICBM, should they decide to do it.

When you match that with what they've been doing on their nuclear program, right – the nuclear program is the nuclear warhead and the ICBM would be the means to deliver that to Washington, D.C., OK?

And so some of you might be sitting here saying, "OK, yeah, fine, but the Israelis attacked Iran in October. Didn't they deal a you know, quite a smackdown on them?" Well, here's what they did, right – they significantly degraded the strategic air defenses. Notice I said "degraded" and not "destroyed." And they significantly degraded their ballistic missile production capacity. Notice I said "degraded" and not "destroyed." And what have they [Iran] been doing since then? They have been rebuilding their strategic air defenses and rebuilding their [missile] production capacity.

And you say, "OK, well, fine. You know, Israel's able to deal with their ballistic missile attacks just fine." Well, I don't know. Open sources – we had more than 30 Iranian ballistic missiles land on Israel's most important airbase, you know?

So thankfully, the damage was light because Israel did some wise things in advance of that, but in future attacks, they could launch a whole lot more. And because of insufficient capacity of ARROW interceptors, Israel, as impressive as they are with their layered air and missile defense, will have a significant problem.

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So they're [Iran] rebuilding it. And by the way, our forward bases, like Al Udeid in Qatar, for example, if we have a major war with Iran, would have serious, serious problems, if we're just being blunt.

And let's remember what happened in January 2020, after we belatedly brought justice to Qasem Soleimani for having the blood of hundreds of Americans on his hands, let's remember that the Iranians fired more than 12 ballistic missiles at two bases in northern Iraq and gave 100 – more than 100 of our fellow citizens – service members traumatic brain injury. And why did that happen? Because we did not have any PATRIOTs in the area to defend them. Why is that? Because we did not have enough.

And that's going to be a major theme of our program, is that, we're going to be talking a lot about capability – threats and capability. Threats, OK. Capabilities to defend those threats. And do we have enough? And [capacity], as I said the other day, is a fancy Pentagon word for we don't have enough.

And then I'll end with this I hope we end the war in Ukraine as soon as possible on just terms for the *invaded* Ukraine against the *invader* Russia. But if that happens, let's be clear, Putin's going to use – and with deference to Lydia's great expertise in all things Russia – Putin's going to use his additional defense industrial base capacity first of course to replenish his forces, and then we have to be concerned, in my opinion, that he's going to use that additional defense industrial base capacity to then start to pay back some of the IOUs to Iran who gave the Russians the Shahed-131 and 136s.

So you're going to have an Iran that's more militarily capable because of their cooperation with Russia, less immune to Western sanctions pressure because of Chinese financial investment. That's a scary scenario for American interests in the Middle East when you're focusing on Iran.

MCLEARY: And you have – I mean, I think it – I was told somewhere recently by a State Department official it takes up to 12 years for us to build a PATRIOT system for an ally for foreign military sales.

BOWMAN: Not to bring up Ayotte again but one of the leading employers for people from the Granite State of New Hampshire was the PATRIOT facility in northern Massachusetts where they built PATRIOTs.

And, you know, I would go and tour that and look at it, and really impressive, patriotic people doing that, but just because – sorry if we have not spent enough on defense broadly. Spending near – I keep saying it – near post-World War II lows on defense as a percentage of GDP, despite the fact that we're confronting the most dangerous geopolitical environment since 1945, we have not spent enough on defense and we have not spent enough on air and missile defense, and that is why we're playing catch-up.

You know, some of this is complicated. You can spend your life studying research and development and acquisition theory and bureaucracy, but some of this is simple. If you want a stronger defense industrial base, spend more, buy more. If you want Americans – when you deploy them forward, between those who want to kill us and our homeland, give them the means to do the job and come home safely.

And the reason we're not prepared today, you start with insufficient defense spending.

MCLEARY: And Mark, to go back and then come back down on the Golden Dome, right, the golden elephant in the room here that underpins all of this. A big project. The President wants it done relatively quickly. I mean, for anything in DOD, I mean, the – it's not going to happen during his term. Nothing – no big development project will.

What do you think of the main goals here of the program? And what – what's the – are the possible in the near-term for this national missile defense?

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MONTGOMERY: So I'll start with what I think it should be and then I'll probably riff on to what it might end up being if we're not careful.

So what it should be is – good call by the President. You know, missile defense is something to focus on. As I said, the adversary's focusing on striking, we should be defending. All three of us have given pretty good examples.

It should be focused on looking forward, it should be focused – and looking forward in missile defense means going to space. This should be at least 70 or 80 percent of the resources applied, should be going towards a system that will not evidence itself during the Trump – at least the Donald Trump, Sr. administration, right, in the next – you know, these are things that are in the next five to seven years probably that you could do a space-based system that includes search and detect, you know, launch detect satellites, several hundred of those; several hundred tracking satellites that track targets and allow you to get a refined solution; what's called a transport layer, which is satellites that move information between all these other satellites; and then finally, attack satellites, satellites that carry some type of weapon that can be launched from space.

And for – you know, that's about 800 to 1,000 satellites. I heard recently pressure points at SpaceX will be involved. No – no kidding, right? SpaceX is what puts satellites up. I've no problem with that. After that, who provides these satellites? I'm not sure. I've seen lots of small companies up here. I imagine they'll be bought by slightly larger companies, and then companies whose names we know, will be putting these up there.

It doesn't matter to me but it needs to be space-based. And the reason it can be space-based – you've got to give Elon Musk a lot of credit here – he has driven down the cost of space launch to a dime on a dollar or even less. And the number's going lower to 3 or 4 cents on the dollar to what space launch was 20 years ago, when we last thought about this in 2002, 2003, and even lower than what we – when we thought in the 1980s, when Ronald Reagan was pushing the space SDI.

So space-based needs to be the majority, or 70, 80 percent of the money, and you need to be saying we're making America safe from cruise, ballistic, and hypersonic threats that come from any of those adversaries that have not yet been developed. That's the beauty of the forward-looking thing.

And the beauty of the satellite one is, hey, these satellites go after every four or five years. I heard a complain about that. Great, cause the technology will have evolved and we've got to get to the new set of technology. And it – that won't be four or five years, it might be 8 or 10. But you need to have a constant refreshing of these systems. And so that's where I put it.

Now, look, the last 20 percent is going to be a – you know, a nod to Donald Trump's ego, and it's going to be about today, expanding the defended asset list today against that threat that I don't think is really quite evidencing itself today, it's on the fringes of evidencing itself.

With that, I mean is terrestrial or legacy-based systems. You know, the problem is what we're talking about here is Aegis Ashore, THAAD, and PATRIOTS. So those are 20-year-old, 30-year-old, and 40-year-old technologies, and we're going to double down on them.

And the problem is they cost somewhere between \$3 million and \$20 million a shot. These are insanely expensive. I want to fire my weapons from space where I take God's good grace of gravity, you know, to get that thing going at Mach 6 or 7 to go hit the target, right, when you drop it from 4- or 500,000 feet – or meters up there.

And so from my point of view, we've got to get, like, an 80/20 balance, 20 percent that recognizes the President said, "I'm going to do something today. All right, here's a little bit for today."

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By the way, I push as much of that stuff forward to go to our forward-deployed forces who are closer to the threat that evidences itself today, and do that.

And finally, I'd put some of this into emerging technologies in the terrestrial area. And by that, I mean putting – getting better and better radars into dirigibles and aerostats that are flying at 40-, 60-, 80,000 feet and give you that long, over-the-horizon, a little bit of better technology into our long-based, land-based radars. You know, this will support the space-based stuff with additional information, and therefore, is part of the future and the present.

And then finally, we've got to tackle hypersonic missile defense. We've taken a pass on it now for five years. We've been watching the enemy develop these. We spend \$4- to \$5 billion a year on hypersonic offense and \$250- to \$300 million a year on hypersonic defense. That's the DOD budget for the last five years. In other words, we spent five cents on the dollar on defense as we do on offense, and we don't do that in any other mission area except hypersonics. And we've got to invest in this. We've made some – and Missile Defense Agency, who otherwise is a key player in all this and will be – is going to be the architect to go into it, made a bad decision; forced into it by low resources, by giving too little money, too little resources; about eight months ago, made a bad hypersonic missile defense solution and down-selected from one of the systems. They need to up-select to both systems, get pushing this out and get it going.

So a little of investment in terrestrial, a little bit of investment in legacy and a big investment in space. If we do that, we're going to be successful. But that takes patience and discipline by the President.

MCLEARY: No more needs to be said.

Lydia, what – what's your assessment of the Golden Dome? We don't really know much about what it's going to look like, right? We have some company names like Palantir and Anduril who are going to play big roles in it. They don't have the production capability to do a whole lot right now, but you know, I'm sure they'll develop. So what do you think the – are the main – what should be the main thrust, like, out of the gate, Golden Dome, just to get this started, get it in the budget, get companies working on it and people designing it?

LAFAVOR: Yeah, thank you. I thought your question at the outset was really informed, that this is a long-term project. This is an intergenerational project. And actually, it's not the first time that this type of project has had intergenerational consequences, and there's often a point to SDI from the Reagan administration in the 1980s, but actually, it was in 1962 that Khrushchev was in a discussion with some Western reporters, and then he said, "Well, we can hit a fly in space." And he came off with this bluster about a capability that they did not have at the time, and then announced the same at one of the Marxist world congresses that that was taking place, as well. And it caught a lot of international attention.

So this is a long-term question. This has been addressed in the past, not always by the United States. And the consequence of that decision in 1962 was actually a flourishing of missile technologies, spinoff technologies from what they were attempting to do.

So even, you know, taking the moon shot at this type of technology created a number of spinoff technologies and technological design ramifications that we still deal with today. So much of what we talk about with the Axis of Aggressors, the development of these four defense industrial bases that our one defense industrial base really has to face off against, when they work collaboratively, when they can prove agile enough to make resources available to one another, that is part of this original conversation.

Yesterday was the Key West – the anniversary of the Key West Agreement, so this conversation's been taking place in the United States for 77 years. It's been taking place internationally.

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I think the big question now is, how do we – how do you invest, and then commit to a multiple-administration trajectory regardless of who wins the next election cycle? There has to be some consensus within the U.S. political base. I would love to see some polling numbers from, the American population on their understanding of just what the scale of this project is.

The Vice Chief of Space Operations spoke at a conference last month, and he said this is on the order of a Manhattan Project, and that statement has been circulating a lot. So the Manhattan Project was, adjusted for inflation, depending on either a flat rate [of inflation] or [a rate based on the] Consumer Price Index, anywhere from \$19 billion to \$30 billion today just for that project. And that was a secret project where, very few members of government signed off on it and made that investment that involved 130,000 American citizens working towards a consolidated effort.

So I think he had mentioned at the time, the Vice Chief of Staff of the Space Force, that this is going to take a cultural shift, an interagency cultural shift to accomplish. So we have to get over that hurdle, and then We have to have a political base that's willing to invest over multiple generations in order to create the sort of shade from this tree that's going to exist for, you know, our kids and grandkids and their kids, several generations from now.

MCLEARY: Yeah.

MONTGOMERY: If I could jump into that. Lydia's bringing up General Mike Guetlein, who's the Vice Chief. He is the right person to run this. If Secretary Hegseth does nothing else when he first announces this than say, "General Guetlein's in charge," we're going to be in a better position. He has the right vision. He has outright space orientation. He's going to get – you know, he's not – you know, he doesn't have, like, the – you know, the skeletons of previous missile defense failures hanging over him. I think he'd be fantastic.

And then the next move I'd make is say the Missile Defense Agency's your lead architect. If we do those two things – put a Space Force person in charge followed by – and one with proven skills like Mike Guetlein, and then put the Missile Defense Agency with General – Lieutenant General Heath Collins as his lead architect, maybe his number two – I don't care how you do that exactly – we're going to be all right.

And then the question is, can we get the resources right? Can we keep the President – can we keep the discipline necessary on this to push this through, as Lydia says, over probably two administrations.

And I'll say hard things like this take time. If you look at, like, how we got Naval nuclear power, right, it was Admiral Rickover now – I'm not suggesting General Guetlein do 30 years in this job. But then there's a guy named Wayne Meyer, Admiral Wayne Meyer who got Aegis right. And – and there's Lieutenant General Schriever, who got ICBM right. In all these cases, you put someone in charge for longer than normal with a vision and the resources and the support of the administration.

We can do really hard things when – when we do this – when we organize ISOs properly. But it starts with the right leader at the top. I think that's where Secretary Hegseth's headed, I – if not, then you've got to re- – kind of reau- reassess where we're at.

MCLEARY: Yeah, and Brad, I mean, I think you've all, you know, are couching this in terms of a multigenerational, multi-administration, at least, effort. Congress gets a vote.

BOWMAN: Yeah.

MCLEARY: Right? So you need appropriators, funding the programs the White House and DOD wants every year, getting budgets passed on time, multiyear contracts for this stuff, and that's been a big thing, especially with the Navy, I think, recently, right? The year-to-year contracts don't always work for some of these larger programs. How much friction is there, do you think, in getting congressional buy-in consistently on an effort this large and this long?

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BOWMAN: Thanks. Between Monty and I, we've got about 11 years in the Senate. And, you know, you spend about one day in the Senate and you realize that you can't do big things and sustain them without bipartisan support. And so, I mean, that's just a reality. So no matter how partisan someone might be reflexively, if you want to do big, good things for our country that last, you have to be able to convince the other party.

And so I think – I'm not suggesting anyone is necessarily doing this now, but if this is framed as a partisan thing, than you're basically killing it in the cradle. What is more non-partisan or bipartisan than defending our homeland? That should be not that controversial. Now let's debate the right way to do it, how much to spend, focus here, focus there, great. But let's not make this partisan. Let's – explain that, you know, one of the first things the homeowner does is defend your home. This is our home, let's defend it.

And, you know, let me just, quickly, if I may, go to one of the key counter-arguments that you'll hear to what we're saying. So some folks, patriotic, decent people, smart people will hear what we're saying, and they'll say, isn't what you're recommending or what Trump is recommending with Golden Dome provocative? Isn't this going to create an arms race? We already have some people saying that. It's not a crazy question. But, you know, it's one that I have dealt with going back when I was trying to, you know, build consensus for things we wanted to do back in the day. That was often the first [thing you'd hear] – you know, aren't you going to spur an arms race?

And – and I think when you hear that, when you're talking about an arms race, we have to – all good policy starts with an assessment of objective reality. And the objective reality is our adversaries are already racing. So when I hear someone say, aren't you going to start an arms race? I say, they're already racing. And there's an element here of what H.R. McMaster talked about in his book *Battlegrounds* of "Strategic Narcissism," and I'm sure I've been guilty of it a ton, and probably doing it right now, we think as Americans everything is a response to us. Well, you know, news flash, sometimes there's terrorists who just want to kill us regardless of what we do. Sometimes there's autocrats that just want to wage the largest invasion of Europe since World War II. Sometimes they're going to do things and the question is, how do we respond?

So they are racing. So when you see your adversary racing, you've got two choices. One is to continue to slumber. And if you slumber while they're racing, your margin of safety will decline and the chances for aggression will grow, or you start to race to defend yourselves. And so I don't think most Americans – and this is an impression thing, I don't have a, you know, 2,000-person poll to substantiate this. I don't think most Americans would find it provocative to defend ourselves, – defending ourselves is not provocative.

And I think it's really important to understand that the only thing worse than engaging in an arms race is losing one. And if you buy what we're saying, that our adversaries are undertaking significant efforts related to ballistic, hypersonic, cruise missiles and drones, then we have to sprint ourselves. And if we don't, our margin of safety will decrease. And that means things like a war we could have deterred or prevented in the Taiwan Strait. We've seen deterrence failure in Ukraine and we've seen the tens of thousands of lives lost as a result.

You think that's bad, Americans? Let's just wait until deterrence fails in the Taiwan Strait. So there's – we've got a window of opportunity here of two, three, four years, I think, where we can take steps to prevent what could be the worst war of the 21st Century. And that's why if I'm recommending where to focus, yes, focus on the homeland, but let's make sure our forward-postured positions in the First Island Chain and places – as well as places like Guam have the air and missile defense they need because that's going to inform the calculations of PLA planners and what the leaders there are saying to Xi Jinping about whether today is the day or not to roll the dice with aggression in the Taiwan Strait.

MCLEARY: And then before I do another question, we're going to do audience Q&A in about five minutes. So if anyone wants to start thinking of some questions, you've got five minutes. Here's your warning.

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Speaking of allies, Mark, again, to go back to the PACOM, how do we bring along allies like Taiwan, South Korea, say, Singapore in the – right up against, you know, the Chinese aggression – how do you bring them along and help them along as far as tactical or ballistic missile defense?

MONTGOMERY: So I think this is one of those areas where in the short term we do need them to continue to invest. And one of the problems with the United States kind of falling off the – like the cruise missile defense cliff 25 years ago – 25 years ago we started to get involved in Operation – in OIF and OEF in Afghanistan and Iraq. Our adversary did not have a missile defense threat.

Over time, the Army made hard decisions, you know, where they moved investment around. And I'd say, gently, air defense, particularly short-range air defense took a holiday for 20 years. Our allies and partners tend to mirror us. And so many of them took the same holiday and they're now coming back from it.

One of the exceptions is Korea. They had the framing focus of North Korea staring them in the face with several hundred thousand rockets and mortars. And they said, you know, we're going to keep doing this. Another exception was Israel, you know, with Iran. But pretty much everyone who didn't have someone staring them in the face took a holiday. All of Europe took – broadly – took a defense industrial base holiday for 25 years, but particularly in air missile defense.

So it isn't like we have great people to turn to say, hey, crank your production facilities up, except potentially the Koreans and the Israelis. And so we're doing that and we're talking to them. And we're talking to everyone about buying things. And our partners are buying things. Australia's bought NASAMS. Taiwan is looking at NASAMS. They've bought PATRIOT. They're buying some air defense systems.

What I'd say for our allies and partners is, they should be looking at the lower-cost end of this. They tend to do production in different workforce environments and in different supply chain environments. Hopefully they can – one of our allies and partners can come up with a Stinger-like missile that it's not going to cost us \$600,000 a round like I think we're headed to with Stinger 2.

You know, we really need to drive down some of the unit costs. So when I turn to our allies and partners, I think what I'd ask them to do is try to drive down the cost of – the unit cost of some of this localized air defense. And then we could buy from that because, boy, do we need it. We're really light on all of these things, especially after Ukraine. We're – we haven't really built Stingers in 19 years. And we've given away a lot of the stuff we had kind of hanging out in armories.

So my thought process with allies and partners is, continue to procure, where appropriate, procure our stuff and – and European stuff, but where possible, really invest in low-cost production. And there I'm thinking Taiwan, Singapore, you know, some of our Southeast Asian partners could do that. And some of our Eastern European partners could probably do that as well.

So that's where I'm looking at it. In terms of building a space-based system, I think kind of like the nuclear umbrella covers many – our nuclear umbrella covers many of our allies, I don't think anyone else is going to be in a position to do what we're about to do in space. So kind of leave that to us and we'll take care of it.

MCLEARY: And before I jump to questions Lydia, kind of that same question, but for NATO, right? The E.U., NATO nations have made a lot of noise for about two years now about ramping up their industrial base. They've done it a little bit. It's hard to do. How prepared do you think that the Europeans are to defend themselves against, you know, Iranian missiles or Russian missiles coming across?

I mean, we've already seen plenty of Russian drones crash into Romania. They didn't know they were coming until they crashed. Missiles have landed in Poland. I mean, it's already happening. I mean, NATO has been, inadvertently most likely, maybe not, but the airspace has been breached, right?

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LAFAVOR: Right. I think with respect to Europe, one of the important things to remember is some of their advanced manufacturing, advanced science can be extremely helpful in this. So this is optoelectronic-intensive technology from top to bottom.

And when I think of the allies that we want involved and collaborating with us in pushing the boundaries and the edges of the optoelectronics that are really at the heart of this, I think of the optical industry in Germany, I think of the optical industry in Japan and South Korea, Taiwan.

Semiconductor manufacturing, I also think of the Dutch and their willingness to withhold advanced semiconductor manufacturing [sic EUV lithography], specific capabilities from China to help maintain some of the semiconductor advantages in the West with respect to, you know, their advanced UV semiconductor manufacturing.

So it's hard to say, "continue to play ball with the United States" if we have difficult relations with some of those European partners. So I would just suggest that we think of these relationships in terms of the positive intellectual environments and the sort of cross-pollinations of ideas at the edge of the technological envelope that's really necessary to achieve this technology sooner. You know, when we say intergenerational, I think 10 to 20 years rather than 40 to 50 years.

So I would just say we should look to our allies and partners for what they bring to the intellectual ferment that's really necessary for a project of this scale.

MONTGOMERY: Yeah, I'm going to be less kind than that.

(LAUGHTER)

(CROSSTALK)

MONTGOMERY: Europe is 100% not ready. They have not invested. They've allowed their defense industrial base to wither, and then they bitch about them – how the Americans treat them.

I – look – and I'm not comfortable with how we've treated NATO and Ukraine over the last two months. Set that aside. 25 years – really, 35 years, since 1990, the Europeans have taken a holiday. They're – it's much – you know, Brad has great lines about how U.S. GDP's crashed over the last 25 years. He's absolutely right.

But U.S. GDP looks like it's on a safe route compared to what the Europeans did. They crashed down to almost all underneath two percent. Russia invaded Georgia – barely a blip. Russia grabbed Crimea – the ones closest to them started to fight and scrape to get to 2 %. Now Russia invades Ukraine – you know, Trump yells at them in 2017 – a little bit of a burble. Russia invades Ukraine, they're like oh crap, all right.

And now – and what we really see is the ones who have the will, the three Baltic states are at 4 %, headed to 5 %. The Poles are at 4.7 %, just chugging along headed to 5 %. Those three or four countries, they have will but they don't have any GDP. Those are 4% of not much, and 5% of really not much.

The ones who have GDP – Germany, UK, France, Italy – they're hunkering down right around 2% or 1.5%. And they talk a bit – the Germans talked a big game in March of 2022. Didn't amount to crap. They're talking a big game now. I'd say, you know, it – it's – like Reagan would, you know, trust but verify, right?

I'm going to watch them very carefully to see where they go with this. They're not ready, and part of this crashing is that they don't have the defense industrial base to build the cruise missile defense systems or their own attack systems. Last year, I believe Europe produced 100 cruise missiles and zero ballistic missiles. You – Russia's doing that in a month.

MCLEARY: Yeah.

BOWMAN: Well – and you've made the point that Germany, right, is buying Israeli air defense...

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(CROSSTALK)

MONTGOMERY: ... and then Germany's buying ARROWs, which I don't think's going to happen. I'd be pretty pissed if I was responsible for that – for THAAD batteries in the United States and then – are there to displace a lack of ARROWs, and ARROWs started to get shipped to Germany. I think I'd have – if I were the President, I'd have a conversation with the prime ministers.

BOWMAN: I know we've got to get into questions. 30 seconds. It's just too good. Yeah, you know, the last NATO report, there may be a newer one – there was 23 of 32 NATO member countries are meeting the 2% baseline, right?

And so not to be a broken record here, but you – you're not going to have the defense industrial base you want, you're not going to have the arsenal you want to share with Ukraine or defend yourself if you're not spending enough on defense.

And even if European countries are spending the perfect amount on defense right now, that's not going to manifest itself in your inventory or your defense industrial base for several years because these things take time.

And – just quick highlight for the Arsenal of Democracy monograph that Ryan Brobst here led – and I was – a pleasure to be on that – makes the point that when foreign partners, allies and partners buy stuff from us, it helps us. It not only helps us economically but increases our arsenal of democracy with which we can arm ourselves.

And so supporting Ukraine has actually been a blessing to us because it's been helping us to strengthen our industrial base so that if China aggresses against Taiwan in 2028, we'll be more prepared than we would have otherwise.

And then in the last comment, the United States is the best-positioned country in the world to deal with growing missile and drone threats that we've been talking about, but as powerful as we are, we need allies and friends more than ever.

And you know, my colleagues get tired of my playground analogies, but there's just so much about international relations that you can explain with a playground metaphor. The moment we're in is a bit like being on a really hostile playground as an elementary school kid and the bullies are circling. And then you walk up to your best friends right at the moment you need them the most and you smack them in the face.

It's not a smart policy, and that's what we're kind of doing right now.

MCLEARY: Well, I think Spain today said they're going to get percent to 2% by the end of the year, but I think a lot of what they have to spend is just to get them back to – into...

(CROSSTALK)

MONTGOMERY: Yeah, but their GDP has collapsed over the last 15 years or...

(CROSSTALK)

MCLEARY: ... Greece is one of the first ones they hated because of their economy...

(CROSSTALK)

MONTGOMERY: ... but Greece, it's also staying there...

MCLEARY: Right.

MONTGOMERY: ... because of Turkey.

MCLEARY: Yeah.

(CROSSTALK)

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MONTGOMERY: ... probably not – you know, not Russia.

And I – I'll just say – last thing – this idea that they're going to go to 2.5 percent, I don't think President Trump deals in decimals. They need to go to three and then four and then five. That's where these countries should be.

They have an authoritarian tyrant breathing down their neck on their border that has shown no respect for international law. He's playing us right now in Ukraine. And they absolutely need to invest. And he wants that Souvlaki, that land bridge to Kaliningrad, and he's going to go grab it and then make Belarus a – formerly part of...

BOWMAN: But if we're going to pound on them to spend five percent of their GDP, maybe we should spend at least 3.2% ourselves...

(CROSSTALK)

MONTGOMERY: Yeah, that would be good...

BOWMAN: ... I don't know, I have this old-fashioned idea of walk your talk. Maybe we should start walking our talk.

MONTGOMERY: I – I am – I do think \$900 billion's a lot of money.

BOWMAN: Yeah, yeah, yeah...

(CROSSTALK)

MONTGOMERY: ... we could spend it wiser.

BOWMAN: Yeah.

MONTGOMERY: But the last thing I'd say on NATO is it's – they don't – when they spend – let's say they spend three percent as a collective group. It would be as if we spent two or 2.5 percent, because they're paying for excess air forces, excess navies. You know, you need 32 armies out of NATO, but you don't need 30 – they don't have 32 navies, but you don't need as many as we have – or as many air forces.

They also need to make hard decisions about what they're specializing in and what capabilities they have. And missile defense is one of those great areas where not everyone – you know, there is a value, there is an efficiency in having a larger unit. And they need to get themselves to that.

So there's a lot that can be done in Europe and NATO. We should treat them – better. Brad's exactly right. But they also need to treat themselves better.

BOWMAN: Yeah. Well said.

(CROSSTALK)

MCLEARY: And now any – we have a few minutes for questions if anyone has a – has any burning questions for the panel. There's a microphone that will come around.

CLARK: Thank you for the great discussion. Joseph Clark, operational readiness analyst with the United States Air Force – correction, Space Force.

(LAUGHTER)

Retired from the Air Force.

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With the implementation of Golden Dome, how do you see Canada and Mexico being integrated into the operational and strategic framework? And what steps should be taken to ensure trilateral coordination and interoperability in the continental – in continental defense?

MONTGOMERY: Listen, I think more about Canada than I do about Mexico in this regard. I think Mexico's an important part of homeland defense in terms of border security, things like that. But I think in missile defense, just the way things fly, they tend to fly, you know, mostly if you've flown to Japan, you kind of notice you spend a lot of time over Canada, and then Russia – I mean, then the Arctic, and then you kind of avoid Russia so they don't shoot you down, and then Korea and come down, right? I mean, they use the Mercator routes and all that.

So Canada's a big part of it, and Canada's a big part of our – there's something called the North American Air Defense System operating today. You know, well, how the president was basically, you know, arguing to make Canada the 51st state. Canadian F-18s are flying combat patrol in defense of the United States. And then, you know, U.S. F-22s and F-15s are flying combat air patrol in defense of Canada the next day.

We split requirements up for who builds radars where. The best place to put most long-range search radars is Alaska or Canada, right, because just the way it can look and the way it can vision and give you the warning you want. If you're going to build these tethered aerostats or dirigibles I've been talking about, they've got to be flying over, you know, Canada, Alaska and Montana, the northern part of the United States, looking forward for this stuff. And then, if you start to worry about Iran or Russia coming from the other way, they're going to be over New England and Nova Scotia and areas like that, and Greenland, which is part of Denmark, just as I recall.

(LAUGHTER)

You know, these are important things where we need to make these investments. So allies and partners are critical to missile defense, but particularly, one ally is more critical than all others, and that's Canada. And you know, it would serve us well to treat the Canadians well. They're making actual defense investments right now based on a shared approach to long-range radars, you know, for detecting inbound threats, and it's mildly inappropriate to be jamming them at the exact same moment that they're making these hard defense department decisions.

They need to get their butts up to two percent, and they need to do it soon. They have been, I don't want to use the word "freeloading", but they've been certainly, you know, riding on U.S. coattails for a significant amount of time, and they need to make more significant investments, particularly in air defense and particularly in maritime.

BOWMAN: There are a dozens – I totally agree. There are dozens of radars in Canada that help us see incoming missile threats to our country. We would be more blind without them. So we are safer as a country in the ICBM context because of Canada, the NORAD collaboration, the fighters that Monty talked about and these dozens of radars in Canada. If we didn't have a friend like Canada, you'd have to invent them. They are a major national security asset for us that we should not take for granted.

MCLEARY: Anyone else?

TALEBLU: Thank you so mu- – thank you so much. Behnam Ben Taleblu, FDD. Really super-rich panel, super-timely. I have a question, because we all focused on state threats, you know, this whole arsenal or spectrum of unmanned aerial threats, drones, rockets, ballistic missiles, cruise missiles. You know, I focus on Iran. Iran's really that link between what you all were talking about, the, you know, DPRK, Russia, China, with the Axis of Aggressors, but with a whole host of nonstate actors that are quickly developing state-level systems like the Houthis, but the whole rest of the Axis of Resistance.

April 22, 2025

Featuring Bradley Bowman, Lydia LaFavor, and RADM (Ret.) Mark Montgomery

Moderated by Paul McLeary

Introductory remarks by Cliff May

Do we need a separate or entirely different approach to counter the nonstate threat actor in this space? Or is it just totally regional and quarantined to CENTCOM? Or can we copy/paste exactly the model that you guys are offering here, which is a great one, and I hope USG does, on state?

MONTGOMERY: So I'm not saying that because I'd say first, handily the Houthis were using our traditional air defense systems at great cost. I mean, I said earlier, it was a year's-worth of production. I also put some numbers on it – more than \$2 billion in defensive intercepts. I can't tell the offensive side, but we've – we're closing on \$1 billion-worth of munitions applied on the offensive side. That's a lot of billions against some guys that are throwing, you know, like a \$2- to \$40,000 to \$100,000 weapons at us. And you know, deterrence – this is the worst form of deterrence in all of defense, – you know, deterrence by denial. We need to impose cost on them.

And so in some ways, I think it is traditional in the sense that you use traditional weapons to defend yourself, and then you impose costs with your normal weapons systems.

I think the one area that's – that's underappreciated and we didn't deal with – and I'm not sure that Golden Dome is how you're going to deal with this. But the United States does get a – needs to get a better handle over the appearance and the tracking and the removal of drones and UASs around the, –domestically, inside the United States.

I think the vast majority of what we hear about are youthful indiscretion, you know, young kids operating where they're not supposed to be, some criminal activity and a little, little, little bit, a sliver of espionage being done by China mostly. The va- – those are not traditional defense threats. Those are things to be handled by law enforcement. You know, when there's Chinese spies near our bases, you know, we don't send, like, three Rangers out to arrest them. We call the FBI and they come and are- – you know, they track and arrest them.

I think these issues need to be handled domestically by the Department of Homeland Security, but that – we have not discussed that, and we need to do it. And I think that if they're going to do – if a nonstate actor's going to do a threat to the United States, it's probably going to come with a drone or an unmanned system. They need to fly – starts domestically and ends domestically, or starts in Mexico and ends domestically.

And so we do have other work to do. I don't think Iron Dome itself is going to attach itself.

LAFAVOR: I would just add to that that I think that might be true in the domestic space, but overseas, the networks, the shared information, the transmission of knowledge does not always flow from, the great power to nonstate actors. Sometimes it flows in reverse. There's actually a really long history of this. So the more actors you have participating in air and missile defense, the broader the conversations. The more people that are testing the envelope of air and missile defense increases the rate of knowledge gain by our adversaries.

And I think they have used this against us in the past, and we should, at this point in time, also be increasing the number of actors that are contributing to our knowledge gain in air and missile defense not just for the Golden Dome over the United States, but in counter-UAS technologies, which is something we've invested heavily in. Exquisite air defense also needs air defense. It would be problematic for small UASs to take out [any component of] these large, exquisite, billion-dollar radars and missile defense systems [that may be terrestrially based].

MONTGOMERY: And we didn't bring up lasers in this discussion, but I do think that directed energy over time is going to have a role. It's not there yet. If I was a C.O. of a ship and I happen to have that Helios directed-energy laser on board and they told me it works out to five kilometers, I'm not wai- – that's probably inside my last time to launch a kinetic weapon. I'm not waiting to say, "Well, we'll let the laser take it," right?

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You know, I mean, I just – you know, as a C.O. of a ship right now, or a C.O. of a battalion or a – you know, an aircraft, you're not going to wait. Right now, lasers have to get at a much greater range where they can either handle a threat or not handle a threat, and you can make an informed decision to transition to your more expensive kinetic defense.

I do think all the services need to – the Navy's starting to use, I think, their five-inch guns with special ammunition more effectively against drones. We need to look at those, let more cost-effective solutions. Eventually, directed energy will be part of it, but the U.S. Army, the U.S. Navy and the Israeli Armed Forces – Defense Forces are all working this aggressively, almost all of them with U.S. research and development money, you know, and hopefully, one of those solutions will evidence itself in a way that it works at 10, 15, 20 kilometers, and makes it part of an actual kill chain decision-making process. Right now, it's like, well, I've got it, I'll use it if it's a last thing.

We've had a couple of near misses with our Navy ships, where the Gatling gun, the – the close-in weapon system, CIWS, has done its job, but I'd prefer—and we prefer it to not use those last ditch systems.

MCLEARY: Yeah, I know the Army sent a Stryker with a directed energy weapon out to Iraq about...

MONTGOMERY: Yeah.

MCLEARY: ... a year ago or so. I don't think it really worked out...

(CROSSTALK)

MONTGOMERY: ... a unit of them, yeah.

MCLEARY: Yeah. I don't think it worked the way they wanted it to but that's – that was part of the point, right – throw it out there, see if it works. It doesn't work, you have other – other...

(CROSSTALK)

MCLEARY: So we've got, like, a minute to wrap up if we can do, like, 20 seconds to wrap up – or, I mean, what's your takeaway here? And would – what do you really want to accomplish here in the – kind of in – in the near term? It's kind of how we started it. But after speaking for an hour, what's the wrap-up?

BOWMAN: Well, thanks for moderating, and thanks for everyone coming and joining online. I think our main message here is that what we have here is a country that's worth defending, and the threats are growing, and our margin of safety has decreased. That's scary and negative.

But the good news is that we're the best country in the world prepared to begin to make progress, and we have an allied network of capable partners with whom we can work. And we need to build bipartisan consensus around the problem, which we're trying to do here; make priorities, understand that this is a – there's a short-term element but this is a generational effort. It's going to be expensive. There'll be disagreements along the way, but this is worth doing and there's no time to waste.

LAFAVOR: I think my big takeaway is to acknowledge the intergenerational timeframe and to pay attention to the sequencing. Removing in any way our terrestrial-based theater missile defense, or not maintaining those forward-deployed forces for any variety of reasons before we have this capability really maturing and coming to fruition could be highly problematic. Sequencing.

MONTGOMERY: I'd say, like, to infinity and beyond. I mean, this is a – this is going to be a Space F – a space issue. We've got to invest in space. You know, I'm agnostic on the—it could be – SpaceX is likely, but it could include Palantir, Anduril, Northrop Grumman, Boeing, Raytheon. I don't really care.



FDD's Air and Missile Defense Program Launch

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Moderated by Paul McLeary

Introductory remarks by Cliff May

You know, we – but we – it's going to need – the principal investment's going to need to be in space. If we had the discipline to do that, we're going to be a much safer, more secure country a decade from now.

MCLEARY: Well, thank you so much everyone, and thanks everyone for coming and watching online.

(APPLAUSE)

END