031517 Missile Defense Advocacy Alliance (MDAA) Capitol Hill Briefing on "Cooperating with Japan on Missile Defense," with Johnny Wolfe, Program Executive for Aegis Ballistic Missile Defense; Shuji Maeda, Political Counselor at the Embassy of Japan; and Riki Ellison, Founder and Chairman of MDAA

MR. RIKI ELLISON: It's great to have our three guests here today. Thank you very much, Rear Admiral Wolfe and Suji. Thank you, sir, for coming.

My name is Riki Ellison. I'm the Chairman and Founder of the Missile Defense Advocacy Alliance. It is a nonprofit, nonpartisan organization founded in 2003. Our sole mission is basically to advocate and educate for the deployment and development of missile defenses around the world. We believe missile defense makes the world a safer place.

Timing is everything and we're here today to talk about two major things. One is really the best capable, best engineering solution to ballistic missile defense of the country of Japan and its 127 million people. And we're also here to recognize this partnership, which is the best in the world, with the United States on missile defense, in terms of integration, interoperability and resourcing.

I was in Japan last month. We were there for -- it was a historic first -- we hosted with the Japanese military their first Missile Defender of the Year. We were able to bring in all three of their services for the first time, and our U.S. counter services that are deployed in Japan. It was an opportunity at that point to really put forward how important Japan was and be the first -- three days later before President Trump put that 100 percent support behind Japan.

We were there four days, right after the first intercept test of the SM-3 Block 2A missile. And we were in Japan and Tokyo when North Korea made the launch on February 12th with that air-launched mobile submarine lofted threat that they demonstrated on that day. We were able to sort of create also, on that same day, spend a couple of days in Korea, and then came back through Okinawa and into Japan and met with some of the government military on the threat a little bit and on some of the solutions that they were considering on doing.

We're very familiar with Japan. Our first (at-bat ?) with Japan was in 2007 when we hosted the entire Kongo ship after their first intercept with the SM-3 Block 1A missile in Hawaii. We've done numerous events, both in Hawaii and in (Yokosuka ?) and Yokota Air Bases, and Okinawa, throughout our reign as an advocacy group.

Our missile defenses started off with Japan and came about with President Ronald Reagan. A lot of us in this room were inspired by that 1983 MDS speech, and Japan was inspired by that speech. They started to open up their exports to be able to facilitate military cooperation with the United States. In 1984 the first Bilateral Study on BMD was established between Japan and the United States. In August of 1999 the first MOU -

- that we're seeing today come through -- was done.

I'm going to pass it over now to Rear Admiral John Wolfe to carry the history through the program. Rear Admiral Wolfe is kind of the "B" guy, the B leader of his team that has done some phenomenal capability in terms of putting this quad 2A into the reality of intercepting missile targets. He runs the ballistic missile defense portion of MDA. I think it's around $1 billion a year that he oversees. Ladies and gentlemen, Rear Admiral John Wolfe.

REAR ADM. JOHN WOLF: Thanks, Riki. Thanks for hosting this event and thanks for giving Mr. Maeda and I a chance to talk about A) the great success that this program has had, and really talk about the cooperative development program, what we call SCU, and really walk you through what this means to both our nations, and kind of walk you through the history and the success that we've had. In this light I thank you, sir, for being here. And again, the partnership that our two nations have on this program, I think is a model for how we ought to do business, and I'll talk a little bit about that, and what your government and what your contractors have brought is just absolutely phenomenal.

What I'd like to do is give you a little bit of history about the SCU program and kind of talk to you about what we did, where we're at, and where we're going with this program. Riki kind of took you up to the point of where we decided we were going to do the cooperative development. In 2006 we bilaterally decided we were going to go have a cooperative development.

This is truly a cooperative development program. It was really driven by the need to have a more capable Standard Missile 3 family that could help us extend the battlespace as our regional threats continue to grow. As we continue to look at what capability is needed, this weapon, as we go through development, truly does what I call expand the battlespace. It gives us more reach. It gives us more capability to go against some of these advanced medium range and intermediate range ballistic missile threats, and it really allows both of our navies -- it will allow both of our navies to truly have a new capability: reach out further, get up there quicker, and go against some of these more capable threats.

And when I say it has really been a cooperative development program, I mean it has truly been a cooperative development program. This is not one of those programs where the U.S. seeks money, we go off and we develop some stuff and then we sell it back to Japan. What I'd like to do is talk you through and get you to understand the complexity of what we've done in this program.

Japan has taken, through their Ministry of Defense, they've invested their own dollars to develop their portions of this missile. So if you look at the steering control section of this missile, if you look at the second and third stage rocket motor, and you look at the nose cone, those have all been developed by Japan with Japanese contractors.

They paid for it with contracts from the Ministry of Defense of Japan. With the Japanese contractors, they developed it to the requirements that we jointly agreed on.

They provided that to the United States where what we've done in our development is we've developed a more capable kinetic warhead which improves the seeker, again which gives us more battlespace and gives us the ability to see further. And we've done what we call the divert and altitude control system, which is really the end-game. If you think about a ballistic missile in space and you're trying to hit that bullet with another bullet, you've got error, right? So we have to divert at the end and this gives us a lot more capability to do that in the end-game.

We've done that in the United States. And then what we've done is we've taken all of that and we've done the overall integration with Japan. So if you really think about it, that's a pretty daunting challenge, right? To date we've been extremely successful in doing that with our partners.

We've done countless tests. We've done tests in Japan of all the Japanese components. We've done testing in the U.S. of all of our components. Based on all of that, and given these flight tests, we've now actually transitioned to where we're qualifying all these so we can get into production, and I'll talk about that in a second.

The way we've built this program is before you want to go do an intercept you want to make sure you've got it right. So what we did was in late 2015 we did what's called a control test vehicle shot. What that is, we took the Japanese components and integrated with the U.S. components, and we built a full-up missile. With that missile what we did was hit a pre-planned fly out to make sure that we got it right, to make sure that all of the integration, all of the components in a flight environment, were going to work the way we thought they would work after we did all the ground testing. Both of those were extremely successful.

So if you really stop for a minute and think about that, if you think about what it takes to fly a missile in space, what it takes to hit a bullet with a bullet, as we routinely say, that's a pretty huge feat for a single nation. Now add the complexity of one nation designing and building half of the system, and another nation designing and building the other half of the system, we're bringing all that together and then we're going to fly that thing. We did it. We didn't do it once, we did it twice on these control test vehicles to prove that integration, and built them exactly like all of our analysis said, exactly what all of our models said, they were extremely successful.

So what that did was, that then gave us the confidence to say okay, we can do this. We can certainly do this. Based on that, then the next thing was now we've got to prove that we can actually hit something.

So in February of this past year in Hawaii out at the Pacific Missile Range Facility, we did just that. We did our first intercept test with the Standard Missile Block 2A against a medium-range ballistic missile target. I will tell you it was awesome.

We had all of our Japanese counterparts there, my counterpart Mr. Eno (ph), others from the Ministry of Defense, others from industry, from NHI there, and we had a successful intercept off the John Paul Jones and we got it right the first time. Think about what that means. We're taking all this advanced technology and we're taking two countries, we're shoving them together, at times. We have different types of cultures on how we do things. We weren't successful once, we weren't successful twice, we were successful three times, and we've only flown three times. So I consider that an unbelievable partnership.

Now, based on that, we've got our models anchored. We're confident that we've got the design right. So we will do our second, what we call development flight test intercept, in the third quarter of this coming year. That will allow us in the development of the missile to say okay, we're ready to go. Based on that, we will now start to look at how we transition this system into production.

Later on this year as the team continues to work through this, we'll take this capability, we'll finish qualification, we'll do some additional flight testing in an operational environment, not a development environment, and we'll continue to mature that system. But again, it's all about when we get into production and we start delivering these assets to our U.S. Aegis BMD ships and the Japan Aegis BMD ships. It's all about expanding the battlespace and more capability for both our nations against some of these more advanced threats.

I have to say I'd be remiss if I didn't take the opportunity to talk about our people. My folks hear me say this all the time. All the technology that I just talked to you about, expanding the battlespace, hitting a bullet, being able to develop a computer system on a ship that will launch one of these missiles that will help you do that intercept, that's great. That's great technology and that's exactly what we need.

But you know, none of this happens without people, brilliant people, brilliant people, dedicated, motivated people. I'll tell you, we've got in the United States. We've got it in our allies in Japan. And we are lock-step in everything that we do in this program.

Lastly, let me give you a good example. Last week I was in Japan. We have an executive steering committee that myself and my counterpart do periodically. I was in Japan to do one of those meetings, but what I said was I'd like to go to one of the Japanese suppliers and I'd like to talk to them and I'd like to tour their factory and I want to understand more about what they do. We did that.

We went down to IHI Aerospace, and Toni Akatunin (ph), and what they do is they develop and produce the second and third stage rocket motors which get (put on the United States' version ?). And I will tell you, the passion that those folks showed is absolutely critical to the success of (our U.S. plants ?). If you know anything about my background I'm a rocket motor guy. I love rocket motors, and so I've been in a lot of

U.S. plants as well. I will tell you the passion and the dedication and the knowledge that our Japanese industry counterparts have is absolutely on par with our world-class facilities that we have in the United States. So we have two world-class organizations, we have world-class contractor partners that we've brought together, and this is really one of those ones where one and one makes two-and-a-half. It has truly, truly been a success.

So we'll continue to work this. This is absolutely a needed capability for both of our countries, in the region and for what we're going to deliver both to our U.S. ships and our Aegis ballistic missile ships. So I really look forward to our continued partnership. I think it's a model and as we transition to production we will continue this partnership into that.

MR. ELLISON: Could I just have you -- my understanding is we've got six or seven Aegis BMD ships out of (Yokosuka ?), and we have four ships from Japan. The platform, I think, is the best multi-mission platform and operates a series of layers of missile defense that nobody else does or can do. Can you sort of explain the difference between that -- you focused your discussion on the SM-3 Block 2A -- what the other systems on these ships are that are today defending Japan? What's the difference between Japan's ships and our ships in that same defense, or if there's any difference in the sensors and so forth on that platform?

ADM. WOLF: Today, as Riki said, we've got U.S. Aegis ballistic missile defense ships in (Yokosuka ?). As we have evolved this Aegis BMD program over time, we've had various computer baselines and we've had various Standard Missile 3 weapons that we put on those. So we've got a mix of SM-3 Block 1As, which is the first Standard Missile 3 variant that we built for ballistic missile defense. We're starting to put the next variant, which is called the Standard Missile Block 1B, which is more capability, a better seeker. And then we will initially have the 2As.

The latest computer based on that is called Aegis Baseline 9. What that computer basically does is it allows you to cue multi-mission air and missile defense. That means that that ship can be in an AAW mode and a ballistic missile defense mode, and they can cover multi-missions at the same time.

In Japan, they have the older variant baseline, as they bought the early military sales for their Aegis ships. So they've got ballistic missile defense capability with the SM-3 Block 1A. Their plan is -- and I'm not going to speak for how or when they're going to do it -- but as part of the cooperative development they will eventually buy the SM-3 Block 2A, which will then go into their newer Aegis BMD ships, which will give them comparable capability to what our latest baseline has as well. So they will get to the point where they have to rely less and less on the United States and they will have the capability to completely protect themselves, as we then play backstop to them, as we help them do that coverage.

MR. ELLISON: That's great, John. And just to top it off, do those 10 or 11 ships

today give you high confidence in Japan against the current threat that's sitting in North Korea?

ADM. WOLF: High confidence. The threats that we designed against, absolutely, Riki. We have absolute confidence. If you look at the success of the Aegis ballistic missile defense program, high confidence, absolutely.

MR. ELLISON: Great. Thanks, Jack. And you were talking about partnerships. Is there any other missile defense program in the Pentagon that is shared in that amount of resources and partnership capacity that Japan and we have done, with any other nation, that's in development?

ADM. WOLF: I'm not an expert on this so I can't go into detail, Riki, but something that would start to get a little bit comparable is the defense of Israel. But it's nothing to what we have done in cooperative development, true cooperative development.

MR. ELLISON: And progress is going forward in both navies, in both ships, as they come down?

ADM. WOLF: Correct.

MR. ELLISON: Thank you. Thank you very much. Our next guest, we're very privileged to have a member of the Japanese government and the Japanese Embassy here. Mr. Shuji Maeda -- forgive my Japanese -- is here today. The floor is yours.

MR. SHUJI MAEDA: Thank you very much. Thank you very much for hosting this event. It's my great honor to here to speak about missile defense. I would like to speak briefly about how the missile defense fits in the overall Japanese defense policy. I'm from the foreign service, not missile defense, but I cover (this portfolio ?) for the embassy and I spend much time on (alliance management ?) for the embassy. To speak about missile defense I think it's important to share with you the Japanese context to missile defense and its policy for Japan.

North Korea has been, of course, one of the biggest security threats to Japan, and their missile program since the '90s, and also their nuclear programs, have been a grave concern to Japan. On many occasions our policy-makers, senior political leaders, have talked about this threat and the importance of addressing that issue. The basic posture of our security policy has been placed on the security treaty that we have with the United States for more than 70 years. The alliance and (the security ?) is the key of the Japan security policy.

In terms of the missile defense we have the Aegis-based SM-3 ballistic missile defense systems, and also the (THAAD ?) system, those capabilities and our preparedness for missiles have been very big always in our security policy thinking. Recently Japan and the United States have adopted a new security bilateral defense

guideline, which was in 2015. We try to enhance the effectiveness of our bilateral alliance posture to this (threat from Pyongyang ?). I would like to touch on two elements in the defense guidelines which are relevant to missile defense.

One is the concept or the mechanism, the alliance coordination mechanism. We decided to make this coordination mechanism – (inaudible) – missile coordination between Japan and the United States. The emphasis is on timely information sharing and common situational awareness. One of the forces or the thinking behind this was to address the issue of the grave threat that has been looming large in our security thinking. I think the timely information sharing and situational awareness are very relevant to the missile threat that we are talking about today.

Also, there is another element in the bilateral guidelines relevant to BMD. It says the two governments will cooperate to expand (how we are going to engage to get more coverage ?) in real-time and to pursue the comprehensive improvement of capabilities to respond to the threat of missiles. So those are the ideas of the concept that we have in mind as we pursue our SM-3 projects and other developments or postures against missile threats.

I'd like to add one other element of our overall thinking, which is our cooperation with the government of Korea. The trilateral cooperation between Japan, the United States and the Republic of Korea is a very important element and an effective one, we believe, in terms of information sharing and coordination to address the threat. We have been undertaking efforts to promote this trilateral partnership.

As Riki and Johnny mentioned, recently the North Korean threats have been ever increasing again. Recently we've seen two nuclear tests and two nuclear tests last year. Recently also missile launch tests at different trajectories – (inaudible). So it's getting common to say, at least in Japan, that this threat of North Korea has reached a new level. We are really concerned about the new threat.

Against this background, recently Secretary of Defense Mattis visited Japan, in the beginning of February. That was the first trip for the new secretary of Defense to the Republic of Korea and Japan, which in itself was a very strong message, a very reassuring message in itself. But Secretary Mattis met our Japanese senior political leaders to discuss the North Korean nuclear and missile programs and the security threat to Japan. The secretary reaffirmed the United States' extended deterrent provided for Japan.

One week later, Prime Minister Abe came to the United States and he had a very successful series of meetings with President Trump. They issued a joint statement on February 10th in which they also emphasized the notion that we are addressing together, Japan and the United States, to address the common challenge in the region. In the joint statement they said the U.S.-Japan alliance is fully capable of ensuring the security of Japan. The United States is fully committed to defending its homeland forces and allies through the full range of U.S. military capabilities. They also reaffirmed the importance

of cooperation between the United States and Japan and the Republic of Korea, the trilateral mission.

In the context of such a comprehensive strategy we have been pursuing the development of our ballistic missile defense capabilities. SM-3 Block 2A is one of the leading (examples ?) for cooperation projects with the United States. Actually that joint study has been – (inaudible) -- also the entire enterprise for Japan and the United States. We have (decided ?) to further strengthen our missile defense posture, including more BMD-capable (ships ?), additional (SM-3s ?) and radars.

We have been hosting United States' missile defense assets in Japan as well. There are two TPY-2 radars in Schariki and Kyogamisaki. As I said, there are other Aegis BMD-capable ships deployed to the Western Pacific.

In conclusion, I'd like to come back to the region and defense guidelines. In terms of ballistic missile defense, the Self-Defense Forces will have primary responsibility for conducting ballistic missile defense operations to defend Japan. The United States' armed forces will conduct operations to support and supplement the Self Defense Forces operations.

Japan has been developing its own ballistic missile defense capability. The thinking behind that is as Japan strengthens its missile defense posture it will deny an adversary's attempt to create a fair accompli at the initial stage of conflict. Further, it will contribute to the enhancement of the credibility of the U.S. defense commitment. So this, we believe, is the way to further enhance the alliance's deterrent capability and we are eager to continue our efforts to build on what we have been doing.

Thank you very much.

MR. ELLISON: Thank you, Shuji. Thank you for coming. Could you just, from your perspective, because you're in the region with that actor, tell us what are the solutions to that problem other than increasing your capability to defend your country? Are there other solutions that Japan is looking at to try to reduce that problem? I don't want to put you on the spot.

MR. MAEDA: We have been doing the missile defense. We have been investing a lot of resources in our missile defense capability. As the threat continues to grow, it is only natural for us to think about a comprehensive way to address the situation. I hesitate to go into any details here, but – (inaudible) – as we increase our capability we also have diplomatic avenues to (back up ?) the solutions, not only the capability itself, but the very messaging (that send out ?) and continual engagement goes to show the alliance's solidarity and to show the credibility of the alliance capability is one of the ways to address the situation.

MR. ELLISON: Thank you. I'd like to open up for the speakers to answer any questions of the audience.

MR. : I'm from MDAA and I had a question for Admiral Wolfe. I believe the trilateral exercises between South Korea, Japan and the United States are wrapping up today. I was just curious as to the command and control elements that are used to link the assets of each country together and how they work together in the missile defense realm. I'd like to know the limitations of that (in terms of ?) interoperability.

ADM. WOLFE: I will hesitate to go into any great detail, but it kind of goes back to the discussion that we had on capabilities on each one of the navies' ships. Certainly if you look at South Korea, because they don't have Aegis BMD, their ability to do anything in that realm right now is not there from a ship perspective. If you look at it from a Japan perspective, because they do have Aegis BMD on their ships as we discussed, they have the ability to start to look at how they would interoperate. I'm not a surface fleet guy, but I do know that when they go out they look at opportunities to figure out how to get the architecture right, how to get the links set up right, so that they can have good, meaningful sharing of data as they start to do that. So the fleet continues to work that, all of the fleets continue to work that as they move forward.

MR. JUSTIN DOUBLEDAY (ph): Justin Doubleday with Inside Defense. For Admiral Wolfe, I was wondering if you could talk to the effects of the ongoing continuing resolution on your priorities at MDA. Then for Mr. Maeda, what are kind of the secondary effects from your view of the budget uncertainty here in the U.S.?

ADM. WOLFE: Right now, from my perspective on the continuing resolution, we are continuing to move programs forward, obviously staying within what we're allowed to do from a continuing resolution standpoint. But the agency in general has prioritized what those are. For this program, to date, again we haven't seen impacts. We continue -- as you can tell – we're continuing. We did the flight test in February. We'll do another flight test in May, as the CR gets worked through. But today, we've seen not huge impacts for us to continue to move forward in this program.

MR. MAEDA: As for the budget debate in the United States, of course this is up to the United States' government to decide on the U.S. defense budget. We've been closely watching the debate in the United States. We consider it has an important messaging. But we are already encouraged by the willingness of the government, and also Congress, to increase the defense budget. We will continue to closely monitor the debate.

MR. : Admiral, I have a question. I think Riki already asked you whether you have high confidence to defend literally millions of Japanese people against North Korea missile threats, and you said yes. But do you have the same kind of high confidence in defending South Korea and U.S. troops and facilities in that region as well against North Korea? And then for our Japanese colleague here, I'm wondering about that earlier threat or concern expressed by President Trump. Earlier he said allies, including Japan, had not contributed enough to their own defense to rely on the United States. I'm wondering if that was a fair assessment and is it getting better in terms of your contributions?

ADM. WOLFE: As far as the question for me, what I would say is South Korea is a different challenge than what Japan is as we continue to work through that. I don't get involved in the policy part of this or some of the other decisions that are being made by those countries. What I would say is I could get you with our PAO and get you in touch with the right folks that are working solutions like THAAD and other things which the South Koreans are looking at. But that kind of falls outside of what my area of responsibility is, if that's fair?

MR. MAEDA: On Japan's burdensharing and the recent debate on defense, for Japan our alliance with the United States has been the central part of our Asia policy. (Inaudible) – we have been developing our own capability and increasing our own defense posture. That has been the case all the way through the history of the alliance. Of course, we are also open to the idea of constantly reviewing and discussing what roles we should bear working through the alliance. The prime minister, when he came here, talked about that, the future workings of the alliance. We will, of course, continue to talk about how better we can address common challenges in the alliance.

MR. ELLISON: I'd just add that there's nobody that has invested more money and more support in ballistic missile defense than Japan. It is the example to the world. I don't believe within the president's perspective on which countries are not contributing, it's the opposite. It's the leader. You saw President Trump say 100 percent support behind Japan. The investments that we're making, over billions of dollars, and they've contributed that amount too, signifies that is the example of the partnership that we want to have with our allies in defending these regions around the world.

MR. JIM SCHOFF: Thank you for the opportunity today. Jim Schoff with the Carnegie Endowment for International Peace. I wanted to ask a little bit about the evolution of the co-development program. In the initial stages, how was the burdensharing, the divvying up of some of these different responsibilities or the different components of the program put together and determined? And then, looking forward, as this program potentially evolves, after this whole experience, is there some thought about realigning that or adding certain things or adjusting or actually some types of corporate mergers or joint ventures of some kind to put this together?

ADM. WOLFE: I was not here. I've been in the shop for about two-and-a-half years, so I was not here when the whole program actually got started. But I can tell you generally how we divvyed out a lot of this.

The way we got, in the U.S., to develop the kinetic warhead and the seeker, a lot of that is what we call critical program information that we decided that we need to maintain. So when you look at rocket motors and things of that nature, I think there was a natural break that said critical program information that has been developed by the United States, that the United States wants to hold onto, that's in our technology. Other technologies that Japan had, when it comes to rocket motor developments and stuff like that, that was great. Again, because it's part of the Standard Missile family, because we

wanted to keep the booster the same, because we wanted to use the same VLS, because it didn't make sense to drive changes in that, the United States kept the integration of that because those are exactly what we've got on the rest of the Standard Missiles and the VLS's that we have on the ship.

The second part of your question was, what are we looking at moving forward? That's a great question. I think as we continue to understand the capability of this particular weapon and we continue to look at evolving threats and where it's at, we will continue to figure out how go and do that, whether it's through modernization. Obviously, anything that our counterparts have been involved with, there will certainly be discussions about how, if it's a rocket motor, how do we collaboratively go and do that to develop that technology? So I would say, is there a future plan today? Nothing in concrete. Do I think there could be? Absolutely, in the future depending on how we move forward.

MR. STEVE PIER (ph): I'm Steve Pier from Congressman Pierce's office. For Admiral Wolfe, is anyone helping in any way our development of the Aegis Ashore architectures that we're looking at now in various places throughout the world?

ADM. WOLFE: Here's how I'll speak to that. Absolutely, it's public knowledge that this missile will go into the Aegis Ashore sites in Poland and Romania at some point once we get into production. As a matter of fact, as part of EPAA Phase 3, that's one of the weapons that will be there along with the 1B. Outside of that, there is no future plans right now on Aegis Ashore for using this weapon in Aegis Ashore. So it will be in ships and it'll be in the two Aegis Ashore sites, from the U.S. perspective.

MR. : The last administration canceled the development of the SM-3 Block 2B. Do you think the next administration will re-start it and would you like to see it re-started?

ADM. WOLFE: I understand the 2B was canceled because we were in the 2A development and we were looking at technologies, looking at the size, so that's why it got canceled. Do I know in the future if this administration – I'm not involved at this point in the policy on that. Do I think that at some point we need to continue to look at technologies to stay ahead of the threat? Yes. Do I know what that is today? No, but we continue to look at that and evaluate that.

Our focus right now is getting through the 2A development, getting the 2A into production, because again, for both of our countries that's an incredible capability enhancement that we need. And then we'll continue to do what we normally do in program manager world, and say okay, what is the next thing that I need to look at and how do we prioritize that with everything else that the Missile Defense Agency has across Admiral Syring's portfolio?

MR. ELLISON: Just to go back into the SM-3 Block 2A missile, if we can't do the JA – it can reach much further than the 1Bs or the 1As --

ADM. WOLFE: Much further.

MR. ELLISON: -- which allows you to have more shots. An earlier intercept would defend a much greater areas. That's why it's so powerful for the country of Japan in that situation, over anything else, that capability.

ADM. WOLFE: It allows us to do an intercept further off and it gives us more divert capability to be more accurate to absolutely guarantee we can hit that.

MR. ELLISON: and is that going to be affordable for both countries? Is it going to be – when will that system, do you think, if everything goes right for you, when does it go into the field in first operations?

ADM. WOLFE: Good questions. I would say, is it going to be a system that both countries can afford? I would say today, because we're not in production and we're still in development, I would not put a cost tag on buying a round today. Obviously, we will continue to look for development, for every opportunity to make sure when we get into production we will be efficient and we will get the cost of the round as efficiently as we can. So that's kind of that portion.

The plan is, as we've gone through the development, we're looking at starting production, transitioning to production, like I said, this year, looking at an FY '18 potential production as we move forward. Up to date, we've worked on the development of the test rounds as we go –

MR. ELLISON: (Will we be putting them ?) on ships in 2018?

ADM. WOLFE: That's a Navy call. We will start delivering by the end of calendar year '18 some quantity of SM-3 Block 2As to the U.S. Navy. The U.S. Navy will decide how they source that across the globe based on their priorities and where they want to send those.

MR. ELLISON: What are the milestones you have to achieve before you get to that production?

ADM. WOLFE: It kind of goes back to where I said, Riki, we're at. We need to finish up the second flight tests. Based on that, we will start our transition production. We've got to finish qualification, which we're on track to finish qualification. Later on we will do a series of what we call normal mission flight tests to continue to show the capability of that so that as we work through we can qualify, we can get a production contract, we can get into production and start producing those and deliver them.

MR. ELLISON: And would Japan's ships be capable of carrying that or would they have to be upgraded?

ADM. WOLFE: Japan's ships will have to be upgraded to a baseline nine. Today, as they look at what they're going to do with their current ships and how they might backfit those and what they're doing with the future ships that they will purchase, they will decide what that mix is and which ones of their ships has that capability.

MR. ELLISON: So the U.S. ships are the ones that have that capability to defend Japan for –

ADM. WOLFE: Our baseline 9 ships have that capability.

MR. ELLISON: But before they come online, that threat. Any other questions?

MR. : Thanks for a great event, Riki. Gentlemen, congratulations really are in order. I'm a former deputy director at MDA and I saw firsthand the personal leadership from Admiral Wolfe to really get the program where, as he mentioned, three for three and then some. Mr. Maeda, congratulations to you and a word of thanks. As Riki also said, the level of cooperation seen between our two nations is really unprecedented. I wish that we, from the United States' perspective, would see that in a lot more nations around the world, so thank you for that.

My question really is for you, sir. You mentioned the North Korean threat being sort of at an all-time high. I absolutely agree. But it's not just a ballistic missile threat. It's going to be also, if an attack comes, and we all hope that it doesn't – but if one does come it's not going to be just from ballistic missiles. It's also going to be from the air. It's also going to be from unmanned aerial systems, potentially. So the fact that you have the ballistic missile capability is great, but what is Japan doing as a nation to sort of deal with the integrated air and missile defense threat? Are you worried about that as well, and are there opportunities for our nations to cooperate in that arena as well as the ballistic missile defense arena?

MR. MAEDA: I think the description of the threat environment that you described is shared very much on the Japanese side as well. The proof of that is that the concept of integrated air and missile defense has already been referred to many times in my talk. With the United States we are jointly developing the posture to address the entire spectrum of the air and missile defense. That's one of our efforts to enhance the alliance capability to address the entire spectrum of the defense of Japan.

MR. ELLISON: You seem to underplay the engineering feats that you accomplished by having two different languages, two different countries, doing two different parts of stuff, and putting it all together to have the capability that it's got. Does it have any residual capability at all for longer range capability than the current short and medium-range (attack force ?), for this requirement? Does it have ICBM or anything like that, or is that not to be?

ADM. WOLFE: The requirements for the SM-3 Block 2A are for intermediate and medium-range ballistic missiles. It's not designed to defeat ICBMs. That's not in

the threat space. It's not in the design space. So it is today a medium-range, intermediate-range ballistic missile, regional, weapon.

MR. ELLISON: Sort of the length from Iran to Europe, which it's designed to do, is not an ICBM range.

ADM. WOLFE: Correct. That's why we (built it ?) against medium-range and intermediate-range ballistic missiles.

MR. ELLISON: Okay. Anybody else have questions. Thank you very much for coming. It was great to really highlight the SM-2 Block 2A, which got (knocked out of ?) the news because the North Koreans fired within four days after you made that great accomplishment. And the great partnership, the outstanding partnership with Japan that I think every country we would want to emulate that relationship to build our missile defenses around the world and to be more capable. Thank you both for taking the time today and talking to our audience and educating us on the problem

ADM. WOLFE: Thank you.

MR. MAEDA: Thank you.

(Applause).