

THE BROOKINGS INSTITUTION  
SAUL/ZILKHA ROOM

A CONVERSATION WITH THE CHIEF OF NAVAL OPERATIONS

Washington, D.C.  
Monday, January 28, 2019

**PARTICIPANTS:**

**Moderator:**

MICHAEL O'HANLON  
Senior Fellow and Director of Research,  
Foreign Policy Program  
The Brookings Institution

**Speaker:**

ADMIRAL JOHN RICHARDSON  
Chief of Naval Operations

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## P R O C E E D I N G S

MR. O'HANLON: Good morning, everyone. I'm Mike O'Hanlon with Brookings. We're privileged and honored today to have Admiral John Richardson, the 31st Chief of Naval Operations of the United States Navy here with us for a speech, discussion, and then for your questions.

I'm just going to give a couple of very brief words of introduction about the Admiral. And he is joined as well by his wife, Dana Richardson, who's been very instrumental in working with military families, as has the Admiral. And we've had the pleasure of doing some things together even here at Brookings with her as well. But Admiral Richardson was a physicist and engineer in his early days, but he continued that kind of interest after Annapolis and MIT in those degrees. He also is well known as the Head of Naval Reactors, a very prestigious and important job in the U.S. Navy. And it was a testament to just how much the Navy valued him and his leadership. They would pull him out of that position and make him CNO. He also is involved in a Navy developmental squadron, again focused on technology, a theme I know we'll come back to today in his remarks and in the interview and audience discussion I know we'll have with all of you. He spent time both in Atlantic and Pacific fleets, spent time on four different submarines, three of them attack submarines, one ballistic missile submarine, commanded the USS Honolulu, I believe, in his final command job before coming Head of Naval Reactors and then Chief of Naval Operations.

So without further ado, please join me in welcoming the CNO to Brookings.

(Applause)

ADMIRAL RICHARDSON: Well, thanks very much. Well, it's a pleasure to be back here. And, Michael, thanks so much for your hospitality and that very kind introduction. I love coming to Brookings just because the vibe of the place is so good and

it's as much as anything a learning institution. You've got a .edu email address and learning across such a broad spectrum of defense security professionals, foreign attachés and leaders, academia and media, the whole deal. And so it's coming here is just such a pleasure. And I really look forward to getting through my remarks as quickly as possible so that we can get to the Q&A, which is where I learn. I learn a lot from just the questions and answers. As the leader of the Navy we strive always to be a learning organization ourselves. We have a .edu, Navy.edu address ourselves, and so I look forward to learning.

I hope to get through my remarks in 15 or 20 minutes, really just to set up in the sort of the most basic way, to describe our way forward, and then with Michael's help we'll get to some questions.

So it's hard to beat this quote from George Washington, "It follows then as certain as night succeeds the day, that without a decisive naval force we can do nothing definitive, and with it everything honorable and glorious." And a lot of times -- in fact, we'll probably spend most of our time today talking about the decisiveness nature of the force, right. And so what goes into making a Navy decisive -- it's capacity, it's capability, et cetera. But I'll tell you what, more and more what I talk these days, talking as much about the honorable and glorious part and what constitutes honorable and glorious behavior, and the principles that underpin honorable and glorious. And it's just my sense that if we don't spend some time talking about these, that we'll forget them or start to take them for granted. And so honorable and glorious things, like life, liberty, and the pursuit of happiness. And I think that particularly for Navies, who are privileged to have a lot of intersections in the advocacy of some of these honorable and glorious principles -- what America stands for in the world. Certainly, I think we would agree that our primary function is a military function, if you talk about the elements of national power. And so we're out there to be a decisive, definitive naval force. But it's just such a special part about being a sailor, I suppose, that you've got

this great intersection with the diplomatic element of national power. Just a quick scan of our history you see that there's a tremendous amount of diplomatic milestones that were done either on U.S. Navy ships or by virtue of the presence of U.S. Navy ships.

And then, of course, there's the economic element of military power and we have great influence on that as we are out and about, maintaining sea lanes of communication open. Over those sea lanes flows about 90 percent of global trade, material and goods. Underneath those sea lanes rides about 99 percent of the internet traffic on undersea cables. And so protecting those sea lanes, protecting access to global markets, an important part of being a sailor as well.

And then, finally, there is this element -- it's hard to find the word -- rescuer or provider of assistance. It's just the nature of all mariners of whatever flavor, whatever color, whatever origin that if you find another mariner in distress, you're going to lend assistance. It goes without saying. And that extends to folks who have been victims of natural disasters, humanitarian crises, a number of things. And so if you think about just what it means to be a sailor, to participate across all those elements of national power, certainly military, but diplomatic, economic, and then also being able to provide assistance, this is as much a part of advocating for what America stands for as projecting power in the other things. So, the United States Navy will be out there, we will be forward, advocating for everything that's honorable and glorious. And make no mistake, if necessary, we're also the team that will fight for those principles if that's needed.

How we go about that. We recently issued a document that defines that. It's kind of the operational guidance, and it's version 2 of "A Design for Maintaining Maritime Superiority". I don't know if you've had a chance to glance it over. I'll give a real top level rundown of it right now here in my talk. But we knew when we did version 1 in 2016 in January, we knew that it was going to need updating. And so it's designed in its DNA to be

flexible and adaptive. And so we decided that in about 2018 we released version 2, we updated it. Now, I would say, you know, a good question would be why a design -- these operational designs to me have great attraction. One, they embed learning inside them. So you sort of have this plan and this plan has a proposed impact on the environment, but there is sort of built in feedback and built in learning into this design structure so you're making a move, you're sensing the impact of that move, and then you're adjusting on the fly. And so we've been operating inside this design construct since 2016, making small adjustments as we go, but really, as I said, became time to really assess the impact the security environment and issue version 2. There's really three reasons that led us to issue version 2. One is that -- well, we had a new strategy on the street. We had the national security strategy, we had the national defense strategy. That led to sort of a Navy strategic examination in support of those strategies, and led to and contributed to the issuance of this design.

Second, you know, it had been two or more years since we had issued designed 1. We were pretty specific about outlining some defined goals and we'd achieved a lot of the goals that we had laid out for ourselves in design 1, so it was time to update that and set some new goals to stay current. And then I always find it valuable to go back and check your basic assumptions that we had, built the strategy and design around in 2016, to validate our understanding of the security environment.

I should also maybe take a point now to say that while I had the privilege of signing the document out, it's a very, very collaborative effort. We want to have the Navy on a trajectory where that trajectory is owned and built by all of Navy leadership. And so we spent a fair amount of time just sort of wash, rinse, and repeat, making sure that we could get everybody's input in and get something -- you know, this trajectory that will last.

And then we took a look at, you know, what those forces are that are

shaping the security environment, an environment that is really changing quickly. And we can maybe talk about this during the Q&A, but even in something as traditional as the maritime environment, things changing very, very quickly. I mentioned this idea of undersea cables and the information environment, which is enabled by those cables, is just changing everything. Maritime traffic itself has quadrupled in the last 25 years. A factor for 4 in 25 years may not sound remarkable, but if you think that people have been going to sea for 8,000 years, to see a times 4 factor in the last quarter century is a pretty remarkable thing. It's fueled the global economy, which the global GDP has roughly doubled in that same period of time. So you see the interlocking of trade and prosperity.

So I mentioned checking our assumptions. The assumptions in the first version of the design, that there were three -- not only had the players changed in this great power competition, which we did articulate in 2016, but also the rules had changed as well. And so as we approach the Super Bowl -- it's interesting to use sports analogies, right -- and so it would be -- if you're not ready to play by the current rules you could have the most dominant player by player team on the field, but if you're not ready to defend against the no huddle offense, right, you're just going to fall further and further behind with every play, you're going to be called for too many people on the field, et cetera, et cetera, and the offense is going to walk into the end zone. And so not only are the competitors important, but the rules of the game are important. We saw that certainly in 2016 we laid out that this maritime domain is increasingly used, increasingly contested, and so that was a factor. We laid out this rise of global information systems and the role of information in just about everything we do, including security and war fighting, the role of data in decision making. And then we laid out this idea of technology that is not only being invented at faster and faster rates, but it's being assimilated at faster and faster rates as well. And so the rate at which people can grab this technology and make use of it, at scale, is much faster than it's

ever been before.

We think that these three factors are still in play and are combining to lay out what we are describing as the spectrum of rivalry. So this picture lays out -- well, it's a spectrum. And on the left hand side of the spectrum you've got sort of day to day operations. This is kind of focused on the military end of the spectrum. So there's stuff to the left of this that is relevant to other parts of national power, but we picked up sort of where the use of the Navy might pick up. And so there's on the left hand side sort of day to day operations, peaceful presence, maybe show of intent, those sorts of things. And as you move to the right we just sort of laid out and picked off some sorts of activity that may define this spectrum. And so as you move through an escalatory period you start to see the use of force becoming then violent, maybe non state violent conflict, state violent conflict, all the way to mobilization towards total war.

Below that you see along that whole spectrum this impact of the information environment, information warfare, whether that -- that would include cyber, that would include things like space, electromagnetic maneuver warfare, which is a bigger and bigger part of our business, and then this counter ISR and targeting, really kind of the battle for who's got the most truthful picture is becoming more and more prevalent.

And then as we laid it out, the idea of what is the challenge that faces us. Well, I would say that to the left of the spectrum there, this is the area where frankly we just need more imagination, okay. In fact, if you think about what we're calling it, gray zone conflict, I mean it's really not telling it what it is, it's just sort of an admission that we don't really quite know what to think about it, so we just call it gray zone. In fact, there's kind of this phrase, which is a real mouthful, it's competition below the level of traditional conflict. And so again, we're defining this by what it's not rather than what it is. And it just seems that we have a conceptual or an imagination challenge to be competitive at the low end of this

spectrum.

And then at the high end there's this continuous capability challenge, again, as technology moves faster and faster, as more tools become available. We want to make sure that the high end we can get things done, get them done faster, get them out to the fleet faster, so that we will compete.

So this is kind of the security challenge, this spectrum of rivalry and the way that we address it. And our approach, our response to this, is laid out sort of in three major areas. One is we've got to in the Navy, I would argue, restore agility. And I would say that agility primarily, as far as we're considering it, has three components. Certainly there's this conceptual agility. And I described a little bit about that at the low end of the spectrum. And also in terms of the way that we operate. There is geographic agility. We were talking about this just a little bit before we came out here, but this idea if the Navy got very, very good at putting strike groups together and those strike groups would leave Norfolk or San Diego and they would book it to the gulf, they would go up into CVOA 4, do their operations, and then they would come back. They would stay there as long as we could and then they would come back. And we got excellent at that. But that was very predictable. We had this thing called the Optimized Fleet Response Plan. It was optimized to get the most presence for the least amount of resources. And we got pretty good, it got pretty optimized that way. It wasn't very flexible, it wasn't very dynamic, and it wasn't very agile. And so as we regain that muscle memory, go back and do those sorts of things, this geographic agility, where we're going places we haven't been in a long time, we're doing so a little bit less predictably, fewer indicators in terms of where we're going to go, is a big part of our business.

Similarly, with ballistic missile defense. And so we've got exquisite capability in BMD, but we've had ships protecting some pretty static assets on land for a decade now. And if we're going to do that, that ship is designed to be a maneuver force, if



that asset is going to be a long-term protected asset then let's build something on land and protect that and liberate these ships from this mission. It's an important mission, so I don't want to say that we're moving away from this mission, and we'll be there as long as we need to, but it seems that a land based system is better suited to protect a land asset than a ship. Then I can take that ship and take it out of those small boxes, where they have to stay for ballistic missile defense, and get them moving again.

So this idea of geographic stability -- and I'll tell you, we're taking some -- you know, you get kind of a new idea, read an old book, right. And so we're reading a lot of old books. We sent a strike group north of the Arctic Circle last fall for the first time since 1991. And so we're tearing out the old binders and the old books as to how you operate up there. In the last 25 years, you'll be happy to know, it still is cold up there. (Laughter) And the North Atlantic in the winter, the perfect storm and all that stuff, makes it tough to operate. One of the things that we read about was hey, make sure you go underway with a number of baseball bats because there's nothing like a baseball bat to knock the ice off of stuff, you know, aircrafts, superstructure. Just kind of beat it and it falls away. And so the Truman Strike Group, they had this whole batting cage of baseball bats and, you know, they're all made out for the deployment. Louisville Slugger was great about providing those collectibles. If you get one, that's a collectible

Third dimension of agility I would say is technological agility. And we simply have to get better at this. I think it's a strategic Achilles' heel, is the lack of the tempo I would say in terms of how we can field technology to the fleet. And so we cannot get outpaced in this. And that comes right to bear at this far right end of the spectrum. We just can't let ourselves be dominated by someone who can get technology to their forces faster.

Second major dimension of our response is that this is going to be a long competition. This is not going to happen in months or single digits of years. We want to

think more in terms of decades. And so as we approach things we have to think in terms of infinite game type strategies rather than finite games. We have to think in terms of sustainability and making sure that we do so maybe up to the red line, but not long-term operations above the red line, because that will just make us increasingly fragile to a disruption.

And then, finally, again kind of going back to that high end of the spectrum. We want to be able to always deescalate from the high end on our terms, which is another way of saying we want to have the best capability on the water.

So those are the three major elements of our response. And we go about that by structuring our approach along four lines of effort, which reside on a foundation of what we call core attributes. And so I will tell you that these core attributes kind of go back to that idea of what is honorable and glorious. You know, this is increasingly important I think in our business that we come back and we bring people into the Navy, in fact, talking about a values proposition of honor, courage, and commitment. So I just had the privilege last Friday of being up in Great Lakes, just north of Chicago. It's still very cold there, and we brought in 1,000 sailors into the United States Navy, a graduation ceremony. And we do that about every Friday. So we're bringing in about 40,000 sailors a year as the Navy grows. And these kids are about as talented as any population. In fact, by all measure of human performance, they're the most talented Navy that we've had on record. And they could write their check and go anywhere in the world. And so why is it that they raise their right hand and make an oath to support and defend the Constitution? I can't compete on salary, and, oh, by the way we're going to demand a lot out of these people, we're going to send them to sea for seven months at a time, separate them from their families, and so this value proposition I think is an important part of what attracts our young people to the service. And we talk about great power competition, but the competition for talent is about as hot a

competition as there is out there right now. There's a tremendous amount of competition for that talent, and yet, for the last 12 years straight we've met our recruiting goals every single month. That's a tribute to the effectiveness of the force, but I think it's also important that we continue to go back and stress the importance of our foundational values as the basis for everything that we do.

And then there's four lines of effort. They're color coded, so we tried to get away from any kind of prioritization. And it was kind of a funny idea. We say, hey, I don't want to number them one through four, because there's always this implicit prioritization. No matter how many times you say there's not, there will be. Number one will always be number one. So a really smart person on my team said, okay, well let's use letters. There will be A, B, C, D. It's like, you're not getting it. There will still be always an A. So anyway, we went to colors. And so the blue line of effort goes right to operations and war fighting, strengthening naval power at and from the sea. Kind of a key word that we maintained is at sea. We're being challenged in blue water operations, blue water competition now, which is a bit of a different dimension as those great powers, Russia and China in particular, build blue water navies. And so what we talk about in this line of effort really is continuing to refine our operating concepts, distributed maritime operations and those sorts of things, exercises that validate those concepts, war games that go in and test these concepts. All of that is contained in strengthening our naval power, the blue line of effort.

Also in this blue line of effort we talk about the importance of diversity. And we think about diversity as an asymmetric advantage that will help us come to better decisions, particularly as machines do more and more of the calculating stuff. So Michael and I are physicists. He's much better than me -- I kind of dabbled in physics. You know, that part of our business is going to be done increasingly by high performing machines. And so the competitive advantage is going to be in creativity, innovation, collaboration, both

amongst ourselves and with technology. And diverse teams have been scientifically shown to be better at that than homogeneous teams. And so we put diversity front and center in the blue line of effort.

The green line of effort, it was interesting. It used to be high velocity learning at all levels. That was designed version 1. We changed that a little bit in version 2 to focus and sharpen ourselves on the outputs, so that it becomes kind of an output oriented line of effort. And in that line of effort, if you had a chance to look at it, we list some pretty aggressive goals in terms of delivery technology. We want to hold ourselves accountable to those goals, getting back to this agility in the technological space. But more broadly, this goes towards describing and defining the Navy as a large complex adaptive learning system. And so how do we get that done at scale across the Navy? Certainly our schools will play a part of that. You know, we've got the Naval Academy, the Naval War College, the Naval Postgraduate School, but we also have all of our fleet exercises, we also have all of our war games that are done primarily at Newport, but at other places as well, we have fleet experiments, we've got our analysis program. All of this has to be coordinated in some way so that we can as a system learn and get better against the challenges that face us. And so really the green line of effort is centered on learning.

Gold line of effort talks about the value of our people, our Navy team, our Navy sailors, our Navy civilians and their families. Really this talks about our human resources business and moving out of the industrial age in terms of how we bring people on, recruit them, train them, educate them, and retain them, assign them, pay them. All of this is undergoing really a transformation. You know, when we started this our personnel systems were running in something like 57 different families of data bases, which I don't know what a family of a data base is, but it's a lot, right. And none of those data bases talked to one another. We had a year where it seemed like there was a great celebration of Admiral

Grace Hopper. Yale renamed one of their colleges for Grace Hopper, Naval Academy is building a cyber center, The Grace Hopper Building. There was a very fitting nice tribute to Admiral Grace Hopper going on. We still had data bases that Grace Hopper wrote in our personnel system. And so we decided that the best tribute to Admiral Hopper would be to get out of this 1950s technology, move it all up into a secure cloud environment, bring 21st century technology and software to bear on it.

And so now, you know, our sailors are pretty much going to do more and more and more of their pay, their orders, their transfers, all of that on their smart device. So they'll get a QR code, and just like your banking, et cetera, you'll get reminders, hey, it's time to leave, get in your car and drive right now and go to your next duty station. You report to your next duty station, you show the QR code at the quarter deck, you're checked in, your pay, everything will click. Take a picture of your receipts, your travel claim is done in 24 hours. We're also getting into this great kind of assignment marketplace where our aim is that we understand the priorities of every sailor individually. And some of them just want to go to the sound of gunfire, fly around at mach 5 and do operation stuff. And I got a lot of jobs for those people, so I can help you there. Some of them want to get some geographic stability. Their family, their kids are going through school, or whatever it may be. And you know what, if I know that I can come up with a plan for you there. Some want education. I've got options there. So we can take your needs, take the Navy's needs, come up with a compensation package, and everybody wins.

So, a lot of this being done, we had to revamp and update the IT structure, and it's allowing us to get at sort of 21st century personnel management, which is I think the least that we owe this talented cadre of people that are coming into the Navy.

And, finally, the purple line of effort is to get after the fact that the U.S. Navy is really just one node in many networks of partners. And so this effort really is to expand

and strengthen our network of partners within the United States, within the Joint Force, right, the Marine Corps being our closest partner all the time, the other services, to be better partners, stronger partners across the interagency. With congress we want to be very transparent, make sure that they understand the modus behind all of our programs. If you start to go a little bit broader, partnering with industry. We're doing some great things in terms of bringing industry into our conversations earlier and earlier so that we can understand sort of the technological art of the possible, where the knee of the curve is I suppose, in performance versus technology so that we can put programs together that are not trying to forecast 30 years in the future and build time travel. This is something that we can deliver with a lot of confidence in a five year timeframe, but we've got to build it in quicker steps, and we bring industry in earlier to help us define what those technological inflection points are.

And then academia is that as well, and the international labs. And then we expand out to our international partners as well, so alliances and partnerships.

So this is sort of our approach. And if we have a firm foundation in our values and our core attributes, we execute along these four lines of effort, we hope to deliver the end stage, which is there at the top, which is really a Navy that can have the best equipment, the best leadership, can learn faster than the adversary, and be ready for decisive combat operations when necessary.

Okay, so that's really it. I don't want to go too much more into this because I want to save as much time for questions as we can. I'll just close up by saying that I hope we've laid out at least enough to stimulate some imaginative questions. I'm happy to talk about my recent trip to China, Japan, so that might be some fruit for conversation. And just let me close by saying the Navy is going to continue -- consistency is a great word. The U.S. Navy has been consistently present around the world where our interests are. And we

will continue to be there going forward. Our actions will be consistent with our words and it will go back toward striving to do what we can with every molecule of our energy, everything that is honorable and glorious. You know, another founding father, Thomas Paine, observed that "A Navy when finished is worth more than its cost." And certainly our partnership, our responsibility to the American people is to make sure that this Navy when finished is worth far more than it cost.

Thank you very much for your time and I look forward to the discussion.

(Applause)

MR. O'HANLON: Admiral, that was great. Thank you. And I'll try to share the time we have left and just ask a couple of questions. And I want to talk a little bit about technology and about the future of the fleet in a little bit more detail that you set up so beautifully this framework.

But first I thought I'd just ask you to take even a 30,000 foot view. You're one of the first members of the Joint Chiefs I think to be speaking in January publicly. We've had a lot of tumult and a lot of turbulence in Washington. Secretary Mattis is gone; we've had a lot of change at the Pentagon. And, also, of course, we've had readiness problems in the U.S. military in recent years. The last time we spoke here was 2017. That was a bad summer for the Navy. I know you've made a lot of efforts to improve things.

Could you just give a sense of the state of the Navy today in light of all of this? You alluded very favorably to the new recruit classes, and that sounded encouraging. But if I just asked you what's the state of today's Navy, how would you respond?

ADMIRAL RICHARDSON: I would say that we're in a good place. And so you alluded to the -- you mentioned the readiness problems in 2017. Of course that was probably most acutely highlighted by the collisions that we had then. You know, I had a chance during this recent trip to go to Seventh Fleet, sit down with their leadership and, just

as importantly, spend some time with just about every level of the fleet out there. So we had breakfast with a group of young sailors, spent about an hour and a half with them, had lunch with a number of the commanding officers on the waterfront, met with the chief petty officers. And so we really had a chance to get a great sense of what's going on out there.

I'll tell you, the readiness and the rigor and everything has really kind of returned to Seventh Fleet and across the board. I had a chance to visit Sixth Fleet as well, and Fifth Fleet. It was kind of an around the world tour. And everywhere we went there is this renewed focus on readiness as a first priority. And so the trends there are very solid. I was gratified to see that and validated by a number of these conversations. The people are talking about the right thing. They're talking about operations, they're talking about war fighting, how can I be better, more effective. We're really not talking about manning problems, we're really not talking about as much equipment problems. We're not done. We're still coming out of this readiness trough, if you will. It took us a decade or so to get in it and we're not out of it yet, but we're on the right trend.

With respect to the turbulence, you know, as you've pointed out in a number of your articles, this turbulence has been really around for much longer than just recently. There's been budget turbulence for a decade. This year being kind of an exception, an on time budget and a very generous budget as well. And I think that particularly naval forces are susceptible to budget turbulence. We're a capital intensive force, both in building things, maintaining things. All of those things thrive on predictability, which reduces risk. So companies can put people on contract, they can build a workforce that they can train, sustain, and keep working. We can get the material costs down, et cetera, et cetera. There are a number of things that thrive with predictability. So to the degree that we can continue to advocate for that, we will.

With respect to leadership at the Pentagon, Acting Secretary Shanahan has



made it very clear that it's really kind of the nautical term, steady as she goes. Our actions will continue to be guided by the National Defense Strategy. I made that very clear at all my stops during this recent trip, which was I hope comforting to allies, partners, everybody, that this idea of consistency is going to continue to be the way to go.

MR. O'HANLON: Excellent. I want to ask you about technology now. And I think the three year vision documents and the very, very powerful, in terms of the litany of technologies you're talking about, directed energy, hypersonics, stealth, unmanned systems in the air, on the sea, under the sea. Out of all of these, and others, which -- I guess a good way to ask it, I hope, that is concise and allows you to give a relatively short answer so we can go to the audience pretty soon, is there a technology you're most excited about in terms of the opportunities you see, and is there a technology area that you're most nervous about in terms of where we have vulnerabilities today, like cyber or undersea cables, at a national level, or where you see an adversary potentially poised to exploit developments faster than we can?

ADMIRAL RICHARDSON: There are a lot of exciting technologies out there, and you mentioned a bunch of them. The idea of autonomous vehicles is just -- your head almost explodes in terms of what that will mean for a capability standpoint, what that means even from an ethical standpoint. I mean you really have to run the gamut in terms of developing that. So this idea of artificial intelligence, machine learning, how you distribute that across the entire Navy, from sensors to decision centers, if you will, and then back out to payloads, is just such a rich area.

And then because of advances in engineering and computers, this directed energy business is -- you know, we're going to be putting some pretty capable lasers on ships this year. So that's going to be an exciting part of our business as well.

With respect to vulnerabilities, I'm not too worried about any particular

technology challenging us. I think that in terms of creativity and innovation, we're going to be able to keep up with, if not outpace anybody in the world. But our system right now is just I think slowing us down in terms of getting it out. As I said during my remarks, potentially a strategic Achilles' heel is our ability to move with urgency to get these systems from the laboratory out into the fleet. And, boy, I'll tell you, this is just a problem where I think we just have to have a bias for getting things done rather than a bias for studying them yet again before we get them done.

MR. O'HANLON: Let me pivot from that to the 355 ship fleet concept and goal that I understand is still official Navy doctrine, but I've been a little confused by it at times because you're trying to look 20 or 30 years into the future at a time when technology is changing so fast. As you point out, we have to change faster, which makes it almost impossible to really envision what a fleet of 2040 or 2050 would be sitting here before 2020. On the other hand, you have to commission ships, you have to build ships. So you're in sort of this conundrum. So I'm just curious, how do you really think about that 355 ship goal? Is it just a goal? We need to have some goal and that's as logical as any, or is it something the Navy really expects to hold itself to? And especially in an era when we expect to see perhaps some big innovations in unmanned systems. Why do we think we can already forecast what that 355 ship fleet should look like in terms of its composition?

ADMIRAL RICHARDSON: Well, I would say that exactly to your point, Michael, first of all that 355 number came from I would say a conglomeration of a number of studies that was done by a number of people, both inside the Navy and outside. And so you sort of take all of that and aggregate it together and there were a couple of conclusions. We did this probably in the 2016 timeframe. So there was a couple of conclusions. One was a consistent conclusion that in order to meet our responsibilities to the Nation we just needed more naval power. And we can talk about the composition of naval power, and it is a super

position of capacity, capability. There's this idea of networking it together, which has a power unto itself, there's people, there's how we operate, and then there's readiness. And all of those things have to come together to deliver naval power.

There was also a very consistent conclusion that in terms of capacity all of the numbers lined up in the mid to upper 300s in terms of numbers of platforms. And so we just kind of went with that and did our own analysis to sharpen it down to a number and a composition. That 355 is -- you know, there's a structure to it that's important as well. And so that was our goal then. Now, even as I say that, right, we are doing that again. So we'll update it. And technology is moving fast, and so how that may change in response to these new technologies that are emerging, we're very open to that.

But the near-term signal is more naval power, let's get building for now, continue to analyze as we go, and then our acquisition system has to be flexible enough to be able to pivot if that's where the analysis leads us.

MR. O'HANLON: Fantastic. My last question -- and then we'll go to the audience -- is about China and your recent trip. I'm guessing there may be follow up on that as well, but of course we're seeing a lot of tension in the U.S.-China relationship. Some of it is at sea, some of it is on land, some of it is in cyber networks, much of it is in trade. And I guess one way to put a question of you concisely would be to say is there any reassuring message you can give us in all of this context, even though we realize we do have to compete with China, we do have to be respectful of their rise and their capability? But is there any calming message that you can convey to the crowd, if that's inclination after such a visit that can maybe reassure those of us who are getting a little scared that we're headed toward another great hegemonic competition, if not another Cold War? Is that the right trajectory that we should expect that we're on, or do you see signs of hopefulness, whether it's in terms of a little more of a modus operandi in the South China Sea, whether it's in terms

of the Chinese being a little bit more interested in genuine military to military exchange and dialogue and confidence building? Is there anything there to go on?

ADMIRAL RICHARDSON: Anything to grasp on? (Laughter) I think that there's a lot. And so one thing was that when we -- well, I've got a -- I would say a good working relationship with my counterpart in the People's Liberation Army Navy. And just an indication of that, we hosted an International Sea Power Symposium in Newport, Rhode Island last September, it's a big event. There are over 100 navies represented, most by their chief of navy at that event. It's a singular event of its type in the world. And my counterpart, we invited him, Admiral Shen Jinlong. He came we asked him to speak on a panel, he did. So this idea of continuing to meet and communicate so that we can get a better and better understanding of each other's intent. And then we went back and asked for a pretty aggressive visit ourselves. I wanted to visit China and reciprocate. And they were open to just about everything that we asked, and so we had a very rich visit in China.

Now, having said that, I don't think that there's any question that we're in competition here. And as we continue to grow, as China continues to grow, there's going to be areas where we have common interests. I would say North Korea; the Korean Peninsula is an area where we have largely common interests. The idea of increasing prosperity for both of our nations. Well, you know, that is a trajectory we both want to stay on for the betterment of both of our people. We also have areas where there are disagreements. There just is. Our understanding of the South China Sea and those sorts of things are just at odds right now.

So the primary purpose of my visit is, one, to continue to get a deeper and deeper understanding of each other's intent. We were very clear about our intent. We didn't shy away from all of those points. They were very clear about theirs and we're going to kind of continue to learn from one another. As we navigate and resolve these differences we've

got to do so in a way that minimizes risk. So you talked about the South China Sea. There is an operational arrangement in the South China Sea for when the war ships of our two nations meet. There's rules of behavior and a code for unplanned encounters that allows us to pass as two ships, without increasing risk, without making it more difficult. And we made that point very clear, that we should, when we do this -- and it's going to happen more frequently as the (inaudible) grows and becomes more operational -- as this happens more frequently we've got to make sure that we make it easier, our commanders make it easier for each other to pass at sea without incident. And we don't necessarily need to look at each other on the high seas as threats. I wouldn't categorize it like that. We're just two ships passing, so let's treat it that way, let's not make it difficult for one another by maneuvering in front of one another or that. This has to apply to all maritime forces, certainly the Navy, but also our Coast Guards, the Maritime Militia. It really has to apply across all of our maritime forces so that we don't have some kind of a miscalculation, which would flare up into something that instantly becomes strategic. Which is another reason for having this dialogue. Certainly there's understanding each other's intent, there's risk reduction, but there's also if something should happen we could call each other up and deescalate that before it gets too hot.

MR. O'HANLON: Well, I'd love to follow up on a million things, but I'm sure others would like to share in the fun. So let me start with we'll take two questions here in the first two rows and then come back to you perhaps. So up here in the front please.

MS. WERTHEIM: I'm Mitzi Wertheim with the Naval Postgraduate School. When I was with the Secretariat you never asked a question unless you knew the answer. I actually believe the best way to learn is to ask questions if you don't know the answer. When I was there, you never asked a question unless you knew. Has the behavior changed?

ADMIRAL RICHARDSON: I think it has. And this has been your question to me in every venue I've been at for the past four years. (Laughter)

MR. O'HANLON: So leave it at that.

MS. WERTHEIM: Well, I care about the --

MR. O'HANLON: Thank you. In the spirit of moving fast.

ADMIRAL RICHARDSON: We're learning.

MR. HARPER: Thank you. John Harper with *National Defense Magazine*. Thanks for being here today, Admiral.

Undersecretary of Defense Mike Griffin has been warning about the threat that Chinese hypersonic weapons pose to U.S. carrier battle groups. What is your assessment of that threat and what can the Navy do from a technology and TDP perspective to mitigate that risk?

ADMIRAL RICHARDSON: Yes, as you can imagine, it gets very highly classified almost instantaneously, to answer that question. But I'll tell what, there's a great virtue to being able to move an airfield 720 miles in a day, right. And so I think rather than talking about the vulnerability of the aircraft carrier that carry a strike group we should think about it as perhaps the most survivable airfield in the region. And if you look at the history of the vulnerability of aircraft carriers, we might also be in a position where we're least vulnerable now, less vulnerable now than we have been since and including World War II. So if you look about the Cold War, the Soviet submarine force was out there in great numbers, and so there was a vulnerability associated with that. And so the combination of operational concepts, combination of the defensive systems -- you know, this is a give and take as we go -- those carriers are able to have a big impact on the operational space and continue to survive.

MR. O'HANLON: A couple of more further back. Let's go to the gentleman

right next to you, Adam, there and then we'll come up here to the gentleman in the striped tie in the sixth row.

QUESTIONER: Thank you very much, Admiral. My name is Thong Qui Lu with China Video News Agency of Hong Kong. I know last week two U.S. Navy ships passed through the Taiwan Strait and I'm wondering how you were interacting with Chinese Navy over there when the two ships passed through the Taiwan Strait. And when you send the aircraft carrier in the future to sail through the Taiwan Strait are you concerned that will cause a kind of misunderstanding between the two sides?

Thank you.

MR. O'HANLON: Do you want to take that? Or shall I take one more first?

ADMIRAL RICHARDSON: Either way.

MR. O'HANLON: Okay. So we'll go here. Yes, please.

MR. HEDERMAN: Hello, thank you. Bill Hederman from the University of Pennsylvania and a fellow Corps 6 grad. My question relates to your point about creativity and faith in our ability to be the most creative. It seems like some of our adversaries have been particularly creative about stealing our ideas. Are we making good progress on that side of the equation?

ADMIRAL RICHARDSON: Okay. Well, I'll start with that one, Mr. Hederman, if I could. The answer to that is yes. And some of this is pretty low hanging fruit, right, with respect to the behaviors and protocols that are in place for the cleared defense contractor. We've made this a part of our contracting requirements. Secretary Guerts, Assistant Secretary for RDA, Research, Development, and Acquisition, has laid those in. It's on a pretty aggressive timeline for compliance with those. And so I think that that will make it less easy for hacking into those types of systems. And so, yeah, we're making good progress there. And, you know, I agree, when you just take stuff it makes your R&D cycle a

lot shorter, doesn't it?

With respect to the question about Taiwan, international waters, the Taiwan Strait, right, so shouldn't be ambiguous about that. And so when those two ships went through the response was professional. So no concerns there. With respect to future operations, always not a great idea to forecast what we're going to be doing in the future, but they're international waters, so anything that can sail through international waters would seem to be eligible to sail in those waters. (Applause)

MR. O'HANLON: There are a couple of more questions. Let me go up Ken in the front row and then we'll go with the gentleman in the red right next to you, Adam, first.

QUESTIONER: Thank you. This is Joe Talbot with Anhora News. My question is in regards to the situation in the Arabian Gulf. Do you see right now any tensions with the Iranian Navy in that part of the world, especially after redeploying the USS Stennis back to the region?

MR. O'HANLON: Do you want to take that or go to Ken first?

ADMIRAL RICHARDSON: Either way.

: Michael, thank you for hosting this forum and, CNO, thank you for being here. So I wanted to get to the Achilles' heel. I've just come from China where they're building very aggressively, fielding new capabilities kind of across the board. And you're leading a learning organization. Is there anything we can learn from China in how they're aligning their enterprise, government, industry -- short of obviously changing our government, our form of government -- where we can get more agile, we can get faster, remove some of these roadblocks, these barriers that are keeping you from having the fleet you really need?

ADMIRAL RICHARDSON: Let me just answer the question about the Arabian Gulf very quickly. You're right, after a longer tether away from the Arabian Gulf --



and I use those terms deliberately because it's a virtue of naval forces that they are maneuver forces and they can move around the globe with great agility. And so a lot of times we get trapped into discussions of presence, you know, is it there or is not. And we're trying to move that discussion to say well what's the tether, right, to get there and how does that relate to whatever strategic warning I may have. And if the time to get there is better, compatible I suppose with the strategic warning, then I might be in just good shape. I don't need to always be there everywhere all the time. But we did go back up there and it had been a while since we'd been in the Arabian Gulf. The response was within historical norms, and so really nothing to be too concerned about in terms of the response of the Iranian Navy.

With respect to the Achilles' heel, you know, there is something attractive about a five year plan that's laid out and funded. (Laughter) And so I don't think that you need to necessarily change government. We do five year plans, five year defense plan. But you just have to -- I mean many of you travel around the world, and one of my favorite places to visit is Singapore. And you just see the fruits of a plan where you've got a plan, you commit to it, and you fund it. I think we can do that, particularly with respect to delivery of capability and maintain that kind of great internal tension that's built into our Constitution with respect to the three branches of our government. You can have it both ways. And so these are the conversations that we're having, particularly in I would say the purple line of effort. I haven't had dialogue.

MR. O'HANLON: Admiral, I think your staff is not kidding about you being out of time (laughter), so I think we will thank you very much.

ADMIRAL RICHARDSON: They're very, very pushy. (Laughter) Okay.

MR. O'HANLON: Please, everyone, join me in thanking the Admiral.

(Applause)

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