

Admiral John Richardson, CNO
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Adm. Richardson: Thank you so much for that very kind introduction. It tends to be a bit technical, though, don't you think? It sounds, I'm starting to feel like this guy over here. [Laughter]. I just want to go back to bed.

I want to thank everybody for joining me in a magnificent hall here, and I think I have to, my natural tendency is to wander around but I think for the media or something I have to stay here. Is that right? For the microphones.

But I do want to just thank everybody here at King's College, the faculty, Professor [Vaughn], Dr. Catalano, and I thought that we could spend some time today quickly going through how I see the maritime environment and then try and finish up my talk in about half the time that we have together and then open it up for questions, if that's a fair set of rules of engagement.

What I'd like to do is highlight a critical question that faces us today which is the question of maritime competition, particularly blue water competition. My thesis is that we have not been in real competition for maritime superiority in about 25 years. Now as we sort of engage in this competition again for the first time in over two decades, we have to be mindful that not only the competitors have changed, and when we talk about competition we're so often drawn to who's playing who, right? Who are the teams? But in the 25 years since we've last done this the very rules of the competition, the character of the competition itself has changed, so I'd like to talk about that.

So we will talk a little bit about the competitors. We'll talk about how the U.S. Navy is responding to that challenge, and then some ideas about sort of the more nuanced challenges that face us, and then we'll open it up for questions after that. That's a quick outline. So if this all works, we'll be in good shape.

So I want to start with very few assumptions. One of the first challenges that we face as we move into this competition is that most of the people that I talk to have this view of the world. So all -- look how busy it is on the land. All of the labels, all of the features, the political part, roads, highways,

railroads, rivers, valleys, streams, mountains, everything. All of the politics centered on the land.

The blue part that occupies 75 percent is really just a nice place to put labels. So they do label the oceans. And then when they get particularly crowded on the land or a country or a feature is too small, the label will go out into the ocean. That's about it. That's how people see the world in many ways. The world around them is very land centric.

So I thought I'd start by how I see the world, which is much more like that. This land part is divided by the oceans, surrounded by the oceans.

So first and foremost if you go back, we're going to shift the perspective of the map so that we put Eurasia here front and center. And then you can see from our perspective the East Coast of the United States over here, West Coast over here. You've got these two oceans that sort of separate our nation from Eurasia. We'll just start building the picture at sea over a series of slides.

First and foremost, a very traditional thing, we'll just lay on the sea lines of communication. Okay? Nothing super magic about this. It's about 4,000 years that we've been going to sea in some form or another. So what you see here is the traditional lines of transit. This is the super highways of trade. 90 percent of the world's trade travels on these maritime highways. So it's extremely important for all of us. You get a sense, these green dots are major ports around the world, and the size of the circle is proportional to the volume of business that that port does. So we talk about a rebalance to the Pacific in the United States, and my goodness, you can see why. Right? Whether we choose to acknowledge it or not there's an awful lot of rebalancing to the Pacific as these economies grow, and just look at the port volume that they're doing in terms of maritime trade.

As I said, millennia that we've been going to sea. Some of the choke points through which this traffic travels have existed since the very beginning, sort of the new folks on the ground are the Panama Canal here, Suez Canal. But if you think about Gibraltar, Malacca, Hormuz, Bab el Mandeb -- very busy recently. Some of these features which shape this trade.

If you go back to the earlier slides, one could be led to believe that it's all very homogenous, but it's not. Right?

There's structures. Structures imposed by these choke points, structures imposed by these ports, and so there is a structure here that can be, that presents opportunities and risks.

Millennia since we've been going to sea and trading at sea. However, in the last 25 years the amount of traffic on the world's oceans has quadrupled. All right? Which is an astounding fact if you think of thousands and thousands of years, there's been a steady buildup but in the last quarter century that amount of traffic on the world's oceans has increased by a factor of four. Okay? This exponential shape that we'll be talking about in so many other areas, and has driven the world economy, which has roughly doubled, in that same amount of time. Global GDP up roughly by a factor of two, 80 percent or so. So very very important, very busy, increasingly contested and crowded sea. Even when we think about very traditional types of uses of the ocean.

Let's keep building.

This is a depiction now, these regions of purple are natural gas deposits, regions of light blue are off-shore oil. And with the advances in technology, many of these resources are now available, accessible for the first time. And this has been another explosion in the last 25 years which has again made the maritime domain that much more important to the prosperity of so many people, so many nations. So there's this accessibility to resources here. In fact you're probably much more well versed in this than I am, but even agriculture, now aquaculture, growing very very quickly as people move off-shore not only for natural resources like minerals, oil, those sorts of things, but also now farming off-shore. A much greater volume of our food comes from the ocean, and that trend also increasing.

As well, so these are the oil and gas deposits. These white diamond-shaped dots are just minerals. Sort of along the seams of the tectonic plates. And those minerals also much more accessible with robots, remotely operated vehicles that can go down and get access to those types of things. So again, another dimension of business, if you will, at sea.

And we'll keep building.

The layer that just came on points us up to the Arctic. In my 35 years in the Navy the Arctic, the North Pole is as small as it's ever been. All right? I think it's as small as it's ever been since we started taking satellite measurements of the size

of the polar ice cap. So what does that mean? Well certainly there are trade routes open, steam lines open across the north for, on the factor of twice as much time you can take those routes across Europe and Russia, even across the north, and North America. That has strategic implications not only from a security standpoint but again, you save a lot of time if you want to take that route rather than going down through all of these choke points. So there's, again, a commercial or a prosperity dimension to that. As well, that's giving rise to rising sea levels. So some of these nations in the Pacific really watching that very closely. They're not that high above sea level, and so a tremendous economic impact and social impact of the rising sea level is brought about by the melting ice cap.

Okay. We'll keep building still.

This is sort of a representation of the U.S. Council on Foreign Relations hot spots in the world. So you can see that one, they're right there in the middle of the map where we've chosen to put our center of gravity, and they often overlay on these choke points as well, so they are right there where trade must go through. Right? So through the South China Sea, about 33 percent of the world's trade travels through that body of water. Through the Mediterranean and this sort of track through here. About 25 percent of the world's trade travels through there, so extremely important from an economic standpoint and then traveling through those hot spots that continue to challenge the security of those areas.

So when you think about where the U.S. Navy, where we want to be stationed, this is where the challenge is, if we want to be out doing what the Navy does, protecting our security and prosperity. These are the areas where it's most challenged, and as you see a little bit later on, this is exactly where our attention is.

So this idea of just sort of the classic maritime. Things happening at sea. Very very dynamic change in the last 25 years. So although we can think about hey, let's just go to sea and get this competition on, maybe as we've done it 25 years ago, fundamentally different rules at sea. Four times as crowded. Access to resources, underwater infrastructure, all of those things new to the competition since the last time we were really in a competitive environment.

And there's more to it. One more layer. This might be difficult to see from the back. It overlays closely with some

of the sea lines, but it's a little bit of a gold color. Undersea cables. So this is a vast network of undersea cables. Copper, fiber optic. On those cables rides 99 percent of the world's internet traffic. International traffic. This cannot be recovered. It can't be picked up by any other thing. It rides on those cables. The satellite constellation can maybe pick up three percent of that volume right now if those cables were disrupted. So again, an extremely important part of the ocean. We talk about the internet, we talk about clouds. And clouds make you look up. The truth of the matter is it's a lake. All of that data, we should be looking to the ocean floor when we think about where that data resides, or at least where it travels. So these cables are interconnecting. And the cables also giving rise to, so this classic maritime force is different than it was 25 years ago, certainly there's another force out there, the force of the information world which is completely new than it was 25 years ago. So it's given rise to a whole cyber element. Whether it's cyber business, security, cyber warfare, you name it. That's a new phenomenon since we last were competing at sea for maritime superiority. It's accelerated everything we were just talking at breakfast, even politically, how fast this internet changes things and what a big impact it's had on the political environment. Just the same with the security environment, giving rise to cyber safety concerns, personal information concerns, the whole thing.

And the speed and the reach and the precision, the cost of entry for that world so low, right? Anybody with a laptop or even a smart phone can be a global player if they're clever enough in this new information environment. Again, an exponential type of shape, amount of information in the world doubling about every two years, so this brings on a challenge in and of itself. How do we operate in that sea of information? How do we make sense? Where do we find truth amongst the noise in that is a challenge again?

So this information environment, a second force that's new since the last time we were competitive in this maritime world.

Then finally, related to that is the introduction of technology in the world right now. Related to information, there's an awful lot of information technology, but it's not just that. Right? It's genetic technology. It's added to manufacturing. If we can three-dimensionally print everything that we need, or more and more of the things that we need, I'll tell you, from my standpoint that changes logistics at sea a tremendous amount. Right?

And then there's also artificial intelligence. Right? There's a lot of investment, reaching an inflection point in artificial intelligence. The Alpha Go, you're all familiar with, this algorithm that learned its way to beat the world Go champion, and then what that means for autonomy, unmanned platforms, that sort of thing. So there's a vast force moving in terms of technologies being introduced. And not just introduced, but adapted faster. So take the telephone, for instance. When Alexander Graham Bell invented the telephone it took about 35 years for 25 percent of the population to get the phone in the United States. The smart phone, what do you think it was when the iPhone came out? How long to get there? About three years. And you know, that that iPhone brings you a whole lot more than that Alexander Graham Bell machine gave you. So there's, again, an exponential dimension to the introduction of technology and what that means for us.

It's about pace. Pace and complexity. And I guess my point is that we can have the strongest team on the field, player for player, but if we are not ready to compete at the pace of the game, we'll just be out-scored. Our defense will be out of position over and over. And so there's this need to become more agile, which is a primary challenge for us in the U.S. Navy.

So lots of changes about the character of the game in the last 25 years, and if we're not mindful of that it's going to be non-competitive no matter who are the competitors. But there are some interesting competitors out there, so I just thought I'd step through those quickly here. There's a depiction of land reclamation in the South China Sea. So arising -- in fact these two competitors, China and Russia, I would say are sort of competitors on a global scale. Right? In just about every way you can slice it now. This is a Russian jet aircraft, we were just talking again at breakfast, flying extremely close to the USS Donald Cook up in the Baltic. I probably should have brought a picture of the Kuznetsov as it transits the English Channel. Much more relevant here in the United Kingdom.

So 25 years ago, these competitors were completely different. We had the Soviet Union back then, was our last real competitor. Russia, a much different competitor than the Soviet Union was. China, brand new on the scene when you compare it to 25 years ago. Okay?

Another group of competitors I would say is that competition posed by Iran and North Korea. Not entirely as global as China

and Russia, but truly another dimension of the competition as we just talked about. Nothing is truly regional now, is it? So everything is at least transregional, if not global. Every, the dimensions of this competition are multi-domain so we can't just wish away the fact that this is going to be a surface, sub-surface, air, space, cyber -- all coming at us at one time. So we've got to be able to move command and control, operate in all those dimensions at the same time. Very very challenging. Even for competitors that we would not too long ago have considered a very regional type of an actor.

Then of course there is this pervasive, persistent, adaptive counter-terrorism threat which continues to challenge us very greatly today.

You've read about the 4+1, right? This is just a representation of that 4+1 broken into I think three roughly distinct groups.

So what do we do? This is the mission of the United States Navy as we confront that competition which has changed both in character and the competitors have changed as well. This is right out of U.S. code, right? Be ready to conduct prompt and sustained combat incident to operations at sea, certainly to protect America from attack but also to preserve our strategic influence in key regions of the world. Nobody can be everywhere, but you've got to be where it counts, when it counts. Trying to capture this idea that we really have to operate proficiently from the sea floor all the way up into space and in the information domain. I will tell you that this deep water, competition in deep water is something that's returned. The idea of sea control isn't something we've had to think about for 25 years and we're getting a lot more water under the keel as we think about sea control in the 21st century.

Then of course our idea is to deter aggression, right? We want to be out there. I want to be the absolute best U.S. Chief of Naval Operations at not fighting anybody. And I think I do that by being so prepared that everybody wakes up in the morning and says you know what? This is not the day to take that on. So the idea is to deter aggression, enable peaceful resolution of conflicts on terms that are acceptable not only to us but to our allies and partners with which we operate so often.

But you've got to be very mindful that if that deterrence fails, our mission is to conduct decisive operations to end any conflict quickly and decisively.

How are we going about that? We'll return to our picture of the globe. We've got operations in the Arabian Gulf right now. The US Eisenhower and her strike group conducting strike operations against ISIL in Iraq and Syria. This is the USS San Antonio, operating helicopters going against, in the conflict in Libya. So they're doing strike operations [insert]. Extremely important, sometimes so effect in being unseen and undetected that they get forgotten. But we constantly have five SSBNs at sea providing that. The undersea leg of the strategic deterrent. So it's critical that we maintain that capability.

In the U.S. Navy we're at a point, and in the Royal Navy, at a point where we have to reconstitute that capability. And then this is a picture of a destroyer, the USS John McCain, kind of operating in the Middle East. It's been very active down there off the coast of Yemen in the Strait of Bab el Mandeb at the southern end of the Red Sea. In fact that's where I'm headed right after this. We're going to get on a plane, fly to Djibouti, and I'll be visiting our teams underway in the Red Sea just to talk to them about how the missile attack went off the coast of Yemen.

So just going back, this is where the demand signal is for us and this is where those forces are deployed. We have on any given day about, within this circle that I'm depicting with the laser, about 100 ships of the U.S. Navy and about 65,000 U.S. sailors forward deployed, away from home, inside that circle. Meeting these challenges, progressing and maturing peace and stability in those hot spots.

Since the end of the Civil War, really, we've been a nation that's been looking beyond our shores to increase our prosperity. We kind of started on the East Coast and the West Coast, worked our way in. At about the mid-1800s we started turning out and this gave rise to Alfred Thayer Mahan, and a lot of naval strategists coming up in the latter half of the 1800s.

The new dynamic now is that we've got this push out as other nations now are turning outward. Whether it's in their near abroad in Eastern Europe, the Baltics, down through the Eastern Mediterranean, or out here through the South China Sea. This is something that I think nobody should be surprised about. Sometimes you just have to raise your eyebrows at folks who are surprised that this is happening. Of course it's happening. It's happened to every prosperous nation. At some point they're going to go beyond their shores, so we should be ready for this. It's not too surprising.

So what does it mean to us? Another mission. How do we deter that conflict in meaningful ways? We'll go to the South China Sea here, and this is a depiction of those areas as the People's Republic of China looks to the sea now to enhance their prosperity. So how do you govern that business. How do you govern that new maritime environment short of conflict?

Certainly there's the United Nations Convention on the Law of the Sea, right? So this depiction gives you a sense of the territorial seas. It might be difficult to see, but there's some red lines that depict sort of the 12-mile limit, if you will -- out from three. If you're a scholar of UNCLOS, it used to be a three mile limit out to 12 as part of that convention.

That's I think pretty much easy for everybody understand. There's rules of behavior when you're in another nation's territorial waters, but it's really just sort of an extension of their territory and you've got to respect that.

Take a look at the same region of the world now when we start to consider exclusive economic zones. And again, a feature of the United Nations Convention of the Law of the Sea. It starts to look a lot more crowded. One thing that I feel strongly we need to do is just sort of advocate, be present and provide a stable force to advocate for behavior consistent with the rule set that has underpinned this prosperity for the last 70 years, really, since the end of World War II. And even in this region of the world, these economies, many of them have grown remarkably under that rule set.

And there are move afoot to take these exclusive economic zones, for instance, which allow a fair degree of freedom of operation inside those and make that rule set a bit more restrictive. Move these EEZ's more towards the rule set that you would apply towards territorial waters. And you can see that a nation like Singapore, for instance, would have to go thousands of miles, they'd become essentially landlocked, if you will, by virtue of making these exclusive economic, the rules associated with the EEZ's overly restrictive. So finding just the right balance point. There's a great give and take as they negotiated that convention. Finding that balance point, a rule set by which we can all abide I think is the key towards avoiding that [dissiditives] trap that people have talked about. This will allow, I mean there's plenty of opportunity for everybody to grow still. It's not a zero sum game. And then even when it does become competitive, we want to do so in a way that avoids

conflict at all possible cost. So these rules and norms I think are the path forward in that regard.

I think that is my last slide. I hope I've delivered on my promise to just give you my perspective, and we've got a little bit of time left for questions and I'm happy to open it up. Thanks very much for being here. It's remarkably early on the calendar, so I appreciate you waking up and joining me. Thanks.

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