

**Chief of Naval Operations
Adm. Jonathan Greenert**

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Adm. Greenert: What I want to talk about today a little bit, about the Naval Institute and what it does for me. Then I'm going to ask you to kind of help us to continue doing it. A little bit about innovation and really a topic called interdependence, which Marty Dempsey and I, the Chiefs, we talk about this now and again. It's a little bit kind of like taking Joint to the next level, if you understand what I mean here.

The Naval Institute, and Proceedings and all that it does, the magazine and all that you do, has been an indispensable forum during my tenure for sure. I've read it every now and again, I use it every now and again, as a service chief, as this service chief, from the time I kind of came in, we wrote things down and said look, we're going to have to lay things out. I can print 100 nice and glossies and everybody will put them on their coffee table and that's about it. But we've laid it out in there and used the Proceedings in this forum, both your web site and otherwise to a great extent.

To me it's like an All Hands Call. It's been our conscience. We get great feedback, and for that I thank you all very much. It's been our way to generate ideas and find organizational blind spots out there, and we depend upon the diversity of thought that this institution brings and we tolerate it, because not everything is fun and all that, but it gives us a great opportunity to lay things out. I think our service, the naval service, the sea services -- all three -- are known to lay things out and have that debate and then carry it out. So you are a great, great enabler of that.

It's been in your history. 1883, Commodore [Lutz] authored "War Schools", an article he laid out there where he advocated for higher education. The result was our Naval War College, which is something that some of you may see I'm starting to move a little bit in a different direction up there. I want to continue doing that. I just interviewed a new president that you'll find out Sunday. It's going to be a little bit different from the way we've done it before. Not a whole lot. You don't

move things like that at great speed, but we'll move along there.

1912 Admiral Nimitz wrote, then Lieutenant Nimitz, "Military Value and the Tactics of Modern Submarines." A few years later, not that much later, he found just how real that might have been when right after Pearl Harbor he used the submarine force in ways we didn't think we would.

Mahon, Teddy Roosevelt, Simms, of course Arleigh Burke and others have used the Naval Institute to a great degree.

I think it's relevant today. I kind of mentioned what I used it for coming into the job. But Ken [McCard] and Mike Rogers not all that long ago wrote an article about how we would deal with intrusions, how we deal with cyber and manipulate and moving in the cyber domain. Little did he know it wasn't all that much later when we had intrusion in our Navy/Marine Corps Internet. You go back and you listen to Mike Rogers tell the story of that awful period that he went through. We learned a lot. That kind of laid out how -- By writing that down, by walking themselves through that, Kendal and Mike, that kind of laid out how we were going to do things in the future.

Jim Amos and I sat down and said how are we going to work together to integrate the Navy and Marine Corps? So we carefully laid it out there in an article, and Jim and I said let's use the Proceedings. Now I'm thinking like all of you, when the commandant speaks, the Marine Corps is going to get right in line. When the CNO leaves, the debate begins. [Laughter].

I found that all of my tribes -- Jim Amos has tribes as well. He is an aviator so there's an issue there, but we're working, we've used the Proceedings. That has helped us. We write our thoughts down with our people, but we take that to our folks, to our executives, and lay that out and we've used that to a great degree.

[A reporter] wrote some criticisms on Air-Sea Battle recently in an article. I picked it up and read it and said this guy's got a good idea. It is kind of crazy. Why are we calling it Air-Sea Battle because when you get into the details there really isn't a battle, per se, involved and when we put all this thing together, and I see some of you are still working there whenever, Bruce [inaudible] and Breedlove, two guys over there in Europe were putting this thing together. But the point would

be, I sat down with this kid and had lunch. We had the four service chiefs, actually -- Odierno and I got together with Welsh and Jim Amos, and we're going to change this thing. Based on a kid sitting down and writing it in there. Better ideas. Clear thought. Using the Proceedings and all that you guys bring to that. So it's been a crossroads of ideas for young officers to come in and write things. Rickover did it, King did it, Nimitz did it. And they started doing it as lieutenants.

I want to talk about innovation and taking kind of a page that you provide the means of innovation of thought. So using kind of that concept and talking to some people I created this thing called the CNO's Rapid Innovation Cell. That's a great way to have nothing happen, right? But I kept it out of the building. I took it down to Norfolk. Fifteen [JO's] and actually even [inaudible], the guy that writes books on innovation, he talked to me a little bit about it. He said don't give them any money or they'll build a bureaucracy. I said boy, it's a little late to know that. [Laughter].

So we gave them like \$10 million, 15 [JO's]. We're on our second set. And these guys, I call them the maniacs. They went crazy finding how to do things more cheaply. They've got a 3D printer on a ship. I've been trying to get between the loggy, my N4, NavSup and all that, to get a 3D printer on the ship. These kids have it out there on the Essex and they're going great guns making little surgical things. Not scalpels or any of that, but you get my point. Little things that save money here and there, gas caps, all kinds of stuff you can imagine would be more than you would expect.

I've got a lieutenant who put together a way to test our cyber vulnerability, and I really can't go into the classification of it, but it's eye-watering. Mike Rogers grabbed it and Jan Ty's got it and we're going to run this. It's really, really good work. Just a bunch of lieutenants.

We're on our second group of that running things quickly through people into the fleet using innovation.

Technology wise, thinking of innovation, you've got technology, process and concepts. I think technology wise, thinking of innovation in the Navy, we're pretty good and I think we're actually on a little bit of probation there down at OSD because we've been running things out to the fleet with not a heck of a lot of tremendous support. I don't really worry about that. I just want to see if the thing works. If it doesn't work, throw

it back in the can, we'll put it back in R&D a while. But we're going to take a laser out. Many of you may know that. We're taking a directed energy laser, we're going to put it on the Ponce. A brand new system on a 50-some year old ship and take it out to the Gulf. It works. Some of you have seen the video. If you haven't, it's out there on YouTube somewhere. We can get it for you. It has already demonstrated the shutdown of a low, slow flyer and a speedboat. So we'll put that out there. That's good.

We're going to [inaudible] with a rail gun, the proverbial rail gun that people talk about, and we're going to put it on a high speed vessel, a joint high speed vessel. That catamaran. Put it up there if you've got the slides out there. There it is. We're going to do it in '16. In fact I've been getting POM briefs this week, budget briefs. The funding is in place.

A couple of things I'd draw to your attention up there, \$25,000 per round. Any of our missiles, the cheapest missile is just under a million dollars. There it is. [Laughter].

You guys know Brandon Farrin, some of you know him, he's on the CNO's Executive Council, helps me out, thinks of stuff. He said [inaudible] CNO, I'm going to come in and lay this out for you. Why are you spending so much time on counter-swarm and not doing swarm yourself? I said I don't know, Brandon. Like everything else, I don't know. Why not? He said imagine how many small boats loaded with explosives you could buy for the cost of one Arleigh Burke. And imagine how much money you're spending on the Arleigh Burke. We've got a lot of remote controlled small boats. WE use them for targets, for crying out loud. So we're working that concept here this summer. We're going to go down to [inaudible] ships off the James River outside of Norfolk and run a couple of scenarios for the Gulf.

So we're taking stuff to see technology wise. We've got a large family of [UUVs]. We're doing okay with that.

There's no shortage of ideas when you process these, but we could use some more. IF you want to call it a process idea, innovative idea, I'd say that the information dominance corps and its creation and how that has come together. We've taken cryptologists whose job it is to gather information, intelligence, to take information and sort through it to provide intelligence to people who understand our networks, really meteorologists and oceanographers and pull them together into a corps, people who are focused on the effort and working within

the cyber domain, has been really an idea, an innovation that has carried us a great deal. This is working well and Mike Rogers taking over up there, CYBERCOM, I think is an example of it. And Jane Ty has moved right in behind Mike up there to show them that for the Navy this has been a great idea. We are producing cyberware, so we're really [inaudible] the joint domain. It's working well.

There are other ideas, innovative ideas and processes that I think I could lay out for you but I think you get the idea.

Where we could use some help is innovation of concepts. What I mean by that is taking what we have and maybe using it better. Taking something like we're working on the SM6 missile, which is turning out to be a tremendous surface to air missile, high speed, moves fast, great maneuver at the end, performs, it's reliable. It can do other things. It can be used for a whole host of other things. Fast, get there, turn, and you can't shoot it down. So in addition to surface to air, there are other domains where it can start and go to, and I'll leave it at that for classification.

There's a guy named Roper in OSD who's doing exactly that for us, looking out in the Western Pacific and a certain set of neighbors out there that we can use conceptual changes with the things that we have. Put a Seeker on a different kind of weapon and do that kind of thing and see if that weapon doesn't stand off further and perform -- More of those ideas we could use some help on as we look out into the future.

Let me talk a little bit about this thing I call interdependence.

First, we'll continue in the Navy advocating for sea power. It's a job that is mine predominantly and you help me out on that, and I ask you to continue to do that. It's a relentless job. I've got Kent Donnegan working right now, a two star admiral on my staff, a kid with a bright future, working on how do we continue advocating for sea power and its value? How do we communicate with the folks we need to? If you're a retired three or four star, you've got some of his work laid out there, and if you're not, you're here. Those of you in the Institute, members and otherwise, you'll see him and some of his work getting out and around as he's worked this with various and sundry people. I thank you for that work in that regard.

As we look toward the future, we look at our interrelations with other services, as we think about our budgets in the future, I kind of come to this, [inaudible] thought process. This gets to where I've been talking to Marty Dempsey.

How do we fit in better as a joint force is something that I'm wondering about. As we've gone through these years of wars, we've been good at operating joint when we need to. But how do we fit in better from really the instigation of the force? So things we buy and the things we need to do.

At best, we'll probably be at a sequester level in the future. People can argue and say that's different, things are going to change, this is going to happen, that's going to happen. But right now it's the law on the books. Sequestration is what we're headed for. Those numbers are going to be tough.

I think as a group, as a joint force we need to look more inward toward each other to deal with this situation. I tell you that left to our own devices we will look outward to each other, when money gets tight.

This week I'm getting these preparations for our next budget and our guys are coming and in this tighter budget they're saying if it has a J in front of it, it's starting to go above corps because it's not inherently Navy. It's not what as a corps we do. I'm not sure that's the right way to do it, to pull away from each other. In fact I'm pretty sure it's not the way to do it.

We need to streamline intelligently. We're doing that. We're working with that in the department. We need to invest wisely, I think we're doing that. We're moving in that direction well. We need to operate innovatively and I think we're doing that. But I think we also need to look at being more interdependent on each other. I think that's going to be tough. I think that's going against what we would normally consider doing.

I think we're being asked to move on in the joint spectrum of operations from deconfliction, that's good; coordinate, that's good; integrate with each other, that's good; operate jointly, that's good. But that's the operational part of it. I think we need to learn better how to build a joint force together and that's the business in the building that we have to think through again. Strengthen the interfaces that we have between the joint forces.

I speak to this audience here, and I haven't spoken much about this, I brought it up at Sea-Air-Space, because in the sea services, in the maritime services, we're not bad at that. We're pretty adept at cultivating partnerships by going to sea. Life at sea causes you to depend on someone else. You learn to trust one another pretty easily. The Navy/Marine Corps connection, the Navy/Coast Guard connection has been going on for years.

For the Marine Corps and the Navy, the Battle of Nassau, 1776, was the first time that we operated together and we've really been doing it ever since then.

With the Coast Guard, we're obviously a natural fit. Today we have law enforcement detachments out on Coast Guard vessels. We have common systems, common sonars, some, common radars for sure. The systems that they build, we even use the same shipbuilders.

So this is something we're used to. We have a pretty connected and common strategy for the Arctic as we move ahead. Last week it was a Navy/Coast Guard operation that rescued that poor sick girl off the sailboat there off California. So we have done that in our services. We have been interdependent and joint with other services. The Air Force, the Doolittle Raid, many years ago. We hung harpoons off B-52s; our mines off B-52s. We're reliant on Air Force tankers. Our aircraft are compatible with Air Force tankers. And today all the joint jamming, if you will, of systems takes place with Navy aircraft. The Air Force depends on us for that.

In the Army, we reposition Army equipment. We have preposition ships out there. We still do that and they depend solely on us for that. Army helicopters still operate off of ships and if you remember the tanker wars, they did during the tanker wars of the late '80s. We had Army helicopters, and we took our close-in weapon systems, CIWS and put them on bases out there in Afghanistan to help defeat and defend against rockets in Iraq and also in Afghanistan.

So we can do this. But I think as we go forward it's going to have to be a pretty deliberate approach. It won't be able to be done willy-nilly and we'll be breaking through some, as I said, some resistance.

I think we've got to avoid single points of failure. I think one Department of Defense capacity necking onto that just won't be acceptable. That's too much risk.

The services have to have their own unique capabilities to be developed, to develop their organic, if you will, unique capabilities, and I think we need to respect that. But we can stop over-spending on similar capabilities. We have a few missiles we're developing, that the Air Force is developing. We don't find that out nearly as soon as we should in the budgeting and programming process. Because IOC's making us come together. If it's born joint and especially if it's a weapon, we don't tend to accept it nearly as much.

We demonstrated something called UCAS, you remember that? It was unmanned coming off aircraft. It was pretty cool. That used to be JUCAS. Then it became orphan UCAS. Then they said no, it's Navy UCAS. Then we took the N off because we knew we couldn't shake it, and we brought it through. Now it's a great deal. It's evolved to now it's the UCAS.

There's a lot of success and a lot of opportunities that I think we need to grab and work out.

It's not going to be easy, but in the budgets of the future I think it's incumbent upon us to take that opportunity.

Let me close, I'll be happy to take questions.

I want to thank you all for being the innovative thinking institution that you are. You nurture it, you build it, and we're getting great value from it so I thank you all very much for that.

I want to thank the readers, the authors, the board in here for communicating the value of sea power as a nation. It's important that it's helping us and I thank you very much for that.

Our end state, to remind, it's the judicious use of people, money and time as we collectively think ahead. Certainly those of us in uniform.

Over ten years of combat, land wars predominantly, we in the building say we've given so much of an emphasis on combat and competency that we forgot about character, so we're working hard on that. But I'd say we've got to look at judiciousness.

Competency in combat can continue to some judiciousness as we look at how we use people, money and time in the future.

WE owe it to those who are going to come after us to have not only an effective joint force but an efficient joint force.

Thanks a lot for inviting me. Thanks for listening. I'll be happy to take any questions you may have.

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