

THE IMPLICATIONS OF CHINA'S NAVAL MODERNIZATION FOR THE UNITED STATES

HEARING

BEFORE THE

U.S.-CHINA ECONOMIC AND SECURITY
REVIEW COMMISSION

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

June 11, 2009

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July 28, 2009

The Honorable ROBERT C. BYRD

President Pro Tempore of the Senate, Washington, D.C. 20510

The Honorable NANCY PELOSI

Speaker of the House of Representatives, Washington, D.C. 20515

DEAR SENATOR BYRD AND SPEAKER PELOSI:

We are pleased to transmit the record of our June 11, 2009 public hearing on “*The Implications of China’s Naval Modernization for the United States.*” The Floyd D. Spence National Defense Authorization Act (amended by Pub. L. No. 109-108, section 635(a)) provides the basis for this hearing.

In this hearing, witnesses told the Commission that the Chinese People’s Liberation Army (PLA) is rapidly modernizing its naval forces and improving its naval capabilities. Furthermore, although the PLA Navy has been modernizing for at least two decades, the rate of modernization has increased in recent years. This naval modernization consists of two main components: a technical side and an institutional side. The technical side is primarily comprised of large-scale acquisitions of new, more advanced vessels, aircraft, weapons, and command and control systems. On the institutional side, the PLA Navy has sought to improve the quality of its personnel and its training in order to better utilize newly acquired naval platforms and weapons. Although nominally defensive, China’s strategy of naval modernization could affect how the United States and its allies deploy forces, protect bases and troops, and conduct military operations in East and Southeast Asia. In addition, as the PLA Navy continues to improve its capabilities, it will more frequently interact with other regional navies, including the U.S. Navy. As China’s recent aggressive behavior in the South China Sea demonstrates, a greater PLA Navy presence in the region could increase the potential for conflict between the United States and China over existing international maritime norms and practices.

A key component of China’s naval modernization that the hearing’s expert witnesses pointed out was the technical modernization made in recent years. Since at least 2004, the PLA Navy has acquired numerous new vessels and aircraft, to include 21 submarines, eight destroyers, and 24 advanced fighters. Moreover, recent high-level remarks within the Chinese government indicate that Beijing is planning on building aircraft carriers. In addition, the PLA Navy has increased its arsenal of advanced weapons, particularly anti-ship cruise missiles, land attack cruise missiles, and advanced naval mines. Of particular importance for the United States is the PLA’s apparent desire to develop anti-ship ballistic missiles (ASBM), which are intended to degrade the force-multiplying effect of U.S. aircraft carriers. Finally, tying these various platforms and weapons together are

advances in the PLA's C4ISR system (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance system).

The PLA Navy has also begun modernizing and improving its capabilities to use these new acquisitions. Witnesses testified that the PLA Navy has taken several important steps towards improving the quality of its personnel. These steps include raising the standards for entry and promotion for both enlisted personnel and officers, as well as creating a non-commissioned officer corps—a key requirement for a modern military. Furthermore, the PLA Navy has sought to improve the quality of its training, for both individuals and units. These changes will help the PLA develop its naval capabilities, and help to shape the PLA Navy into a modern force.

Taken together, these modernization efforts have several implications for the national security of the United States and its allies. First, the Commission's witnesses testified that China's naval modernization increasingly allows the PLA to deny the U.S. military access to China's littoral waters and the Western Pacific. As the PLA Navy improves its capabilities, advanced Chinese naval platforms and weapons in the hands of well-trained, professional soldiers will increase the dangers confronting U.S. forward-deployed forces, possibly requiring them to operate at a distance in order to maintain safety. For example, witnesses stated that the PLA currently deploys several types of advanced anti-ship cruise missiles that form the backbone of China's anti-access and sea denial strategy.¹ Furthermore, PLA anti-ship ballistic missiles could become a potential "game changer" in naval warfare should they become operational.² It was also pointed out that although the U.S. Navy has ample forces and capabilities to deal with the PLA Navy in the near and midterms, the outcome of a naval confrontation in the long term is less certain.³

A second implication of China's naval modernization is the direct relationship between greater capabilities and a more robust naval presence. As the PLA Navy improves its capabilities, it is likely that its vessels will more frequently be encountered by other navies in the region and around the globe. For example, a few years ago the PLA Navy would have been unlikely to execute its on-going anti-piracy deployment in the Gulf of Aden. In addition, in recent years there has been a dramatic increase in PLA Navy port calls both within and outside of the region.

An increased PLA Navy presence in the region is not by itself negative. However it could be problematic when coupled with Beijing's failure to conform to current international maritime norms and practices in regards to Exclusive Economic Zones

¹ U.S.-China Economic and Security Review Commission, *Hearing on the Implications of China's Naval Modernization for the United States*, testimony of Rear Admiral Michael McDevitt, USN (Ret.), June 11, 2009; and U.S.-China Economic and Security Review Commission, *Hearing on the Implications of China's Naval Modernization for the United States*, testimony of Richard D. Fisher, Jr., June 11, 2009.

² U.S.-China Economic and Security Review Commission, *Hearing on the Implications of China's Naval Modernization for the United States*, testimony of Paul S. Giarra, June 11, 2009.

³ U.S.-China Economic and Security Review Commission, *Hearing on the Implications of China's Naval Modernization for the United States*, testimony of Rear Admiral Michael McDevitt, USN (Ret.), June 11, 2009.

(EEZ). Of key importance here is the possibility for misinterpretation and inadvertent conflict arising from Beijing's view of maritime law. According to one witness, some influential PLA scholars wrote that any military action, including freedom of navigation and overflight acts, in its EEZ could be "considered a use of force or a threat to use force"—a very liberal take on the United Nations Convention on the Law of the Sea.⁴ Such an interpretation by the PRC could lead to a serious incident at sea between the PLA Navy and the U.S. or other regional navies. Furthermore, some witnesses pointed out that if the PLA feels it is the stronger of the parties involved, it may be more inclined to resort to violence.

A final implication of China's naval modernization is its potential threat to U.S. allies in the region. Besides numerical superiority, the PLA Navy also enjoys a growing qualitative superiority versus most navies in East and Southeast Asia. While the Japanese Navy is possibly the only navy (besides the U.S. Navy) that is qualitatively better than the PLA Navy, Article 9 of Japan's constitution prohibits it from developing the power projection capability that is necessary in modern naval warfare. Complicating this dynamic is Japan's near total reliance on overseas oil imports which travel routes within increasingly easy reach of the PLA Navy. In the South China Sea's region Beijing clearly possesses the superior navy, with the potential development of a Chinese aircraft carrier only widening the gap between the PLA Navy and regional navies. As a consequence, a naval arms race in East Asia may ensue.

Thank you for your consideration of this summary of the Commission's hearing. We note that the full transcript of the hearing plus the prepared statements and supporting documents submitted by the witnesses can be found on the Commission's website at www.uscc.gov, and that these can be searched by computer for particular words or terms. Members of the Commission are available to provide more detailed briefings. We hope these materials will be helpful to the Congress as it continues its assessment of U.S.-China relations and their impact on U.S. security. The Commission will examine in greater depth these issues, and the other issues enumerated in its statutory mandate, in its 2009 Annual Report that will be submitted to Congress in November 2009.

Sincerely yours,



Carolyn Bartholomew
Chairman



Larry M. Wortzel, Ph.D.
Vice Chairman

cc: Members of Congress and Congressional Staff

⁴ U.S.-China Economic and Security Review Commission, *Hearing on the Implications of China's Naval Modernization for the United States*, testimony of Peter Dutton, June 11, 2009.

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IMPLICATIONS OF CHINA'S NAVAL MODERNIZATION FOR THE UNITED STATES

THURSDAY, JUNE 11, 2009

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION
Washington, D.C.

The Commission met in Room 562, Dirksen Senate Office Building, Washington, D.C. at 8:48 a.m., Chairman Carolyn Bartholomew, and Vice Chairman Larry M. Wortzel and Commissioner Peter Videnieks (Hearing Cochairs), presiding.

OPENING STATEMENT OF VICE CHAIRMAN LARRY WORTZEL HEARING COCHAIR

VICE CHAIRMAN WORTZEL: Good morning, ladies and gentlemen. Welcome to the sixth hearing of the U.S.-China Economic and Security Review Commission in this 2009 reporting cycle. I'm Larry Wortzel, Vice Chairman of the Commission, and Commissioner Peter Videnieks and I will cochair the hearing.

Our purpose today is to gather information about China's naval modernization with a view toward understanding the scope, strategies, and the intentions of the People's Liberation Army and the central leadership of the Chinese Communist Party in developing a modern navy with a reach beyond China's immediate coastal waters.

We also seek to understand how the changes in China's maritime posture and its strategy may affect U.S. security interests in East Asia and around the globe.

In the past decade, China's approach to maritime security and its naval posture has evolved from that of a nation that really focused on continental issues to one of a nation that recognizes its broad interests and economic interactions around the world.

Much of China's energy and other resource needs are supplied by sea, and the bulk of what China exports moves by sea. In Beijing, senior leaders recognize that a modern China must build the capacity

to protect its maritime interests.

Also, as we will hear in one of the panels today, there are serious differences between China and the United States over issues related to activities in the exclusive economic zone that have already led to confrontation between our two navies, both in the East China Sea and the South China Sea. These differences have the potential to create volatile situations if they are not well addressed through diplomatic activity.

To help us understand the issues, we will be joined today by a number of expert witnesses from the government, academia and the private sector, and, in particular, we're pleased to welcome several members of Congress today who have taken time out of their schedules to join us.

Congresswoman Madeleine Bordallo from Guam, who cochairs the China Caucus, will be with us shortly, and she will be followed a little later by Congressman Randy Forbes from Virginia, and they will present their views on China's naval modernization.

Later in the day, former Senator John Warner will provide his views as the former Secretary of the Navy.

On the 30th of April 2009, the Chinese military conducted a large fleet review in the port of Qingdao, China that commemorated the 60th anniversary of the People's Liberation Army's Navy, or PLA Navy.

On display were many of the Navy's newest vessels and aircraft and, for China, the Qingdao fleet review was an opportunity to demonstrate both to a domestic audience and an international audience the progress the PLA Navy has made in modernizing its forces.

In recent years, China has made great strides in modernizing those naval forces. Since 2004, the Chinese Navy has procured dozens of modern naval platforms: 20 submarines spread among five different classes; eight destroyers; and 24 advanced fighters, including the Su-30 Mkk2.

China, I would say, is on the cusp of deploying an operational submarine-based nuclear deterrent, and the Central Military Commission seems to be considering building aircraft carriers.

There appears to be a credible effort by the PLA to develop the capacity to deny regional access to any potential adversaries through the use of anti-ship ballistic missiles and anti-ship cruise missiles. Some Chinese military writings on their doctrine have emphasized the need for China to "control the seas" through the use of missiles, electronics and information technologies, and these approaches span the surface, subsurface, air, and space domains of warfare.

Finally, recent PLA naval events, such as the ongoing deployment of three PLA Navy vessels to the Gulf of Aden, the first

transiting of Chinese surface combatants through Japan's Tsugaru Strait out into the Pacific Ocean, and the noticeable increase in overseas port calls, demonstrate that the Chinese Navy is turning into a blue water navy.

Taken together, these developments represent a navy that seeks to secure China's maritime interests, which include securing China's sovereign territory, patrolling vital sea lines of communication, defending its economic and political interests overseas, and denying access to waters near China.

They also could affect how the United States and its allies deploy forces, protect bases and troops, and conduct military operations in East and Southeast Asia.

I welcome all of you to the hearing, and I now turn to my cochair for this hearing, Commissioner Peter Videnieks, for his opening statement.

OPENING STATEMENT OF COMMISSIONER PETER VIDENIEKS HEARING COCHAIR

HEARING COCHAIR VIDENIEKS: Good morning, everybody. I'll add a little bit to Vice Chairman Wortzel's remarks. And thanks to everybody for being here so early this morning to help us understand China's naval modernization.

DoD's 2009 Annual Report to Congress on the Military Power of the People's Republic of China states, quote: "Since 2000, China has expanded its arsenal of anti-access and area-denial weapons, presenting and projecting increasingly credible, layered offensive combat power across its borders and into the Western Pacific."

Given the importance of the Western Pacific to the United States, it is crucial that we understand exactly how China's naval modernization impacts U.S. national security.

In recent years, China has modernized its naval forces. It has constructed or procured dozens of new vessels, including very modern submarines and surface combatants. It has also improved its offensive weapons systems, developing anti-ship cruise missiles and pursuing anti-ship ballistic missiles.

This acknowledged technological progress has been mirrored by a similar improvement in the navy's institutional aspects. Organizational restructuring, personnel reforms, and training improvements have all been carried out over the past few years with a goal of transforming the People's Liberation Army Navy into a modern, capable naval force.

Therefore, the purpose of this hearing is to examine the impact of this naval modernization on the U.S., particularly on our national

security interests in the Western Pacific region.

What effects will China's offensive weapons' development have on the U.S. military's capability to respond to a crisis in the region? Will China's naval modernization negatively impact U.S. strategically important sea lines of communication? And finally, what should be done to ensure that the U.S. maintains its freedom of navigation in the Western Pacific?

These are a few questions that I'm interested in exploring during today's hearing.

Again, thanks to everybody for being here.

Congresswoman, thanks for coming here this morning. Let me read a short description of your career.

In 2003, Congresswoman Madeleine Z. Bordallo became the first woman representative to represent Guam in the U.S. House of Representatives. Ms. Bordallo brings to Congress many years of public service experience in the executive and legislative branches of the government of Guam and numerous non-governmental organizations. This is the Congresswoman's fourth term.

Ms. Bordallo serves on the House Committee of Natural Resources and on the House Armed Services Committee. In addition to her committee responsibilities, Ms. Bordallo serves as Secretary of the Congressional Asian Pacific America Caucus, CAPAC, as well as Chair of the Healthcare Task Force for CAPAC. She is also a member of the China Caucus, the U.S.-Philippines Friendship Caucus, the Korean Caucus, the Army Caucus, and the Navy/Marine Corps Caucus, the Reserve Component Caucus, and the Travel and Tourism Caucus, the Women's Caucus, the Taiwan Caucus, and the Bulgaria Caucus.

Thank you very much for being here again, and we'll listen to your remarks.

PANEL I: CONGRESSIONAL PERSPECTIVE

STATEMENT OF MADELEINE Z. BORDALLO A U.S. CONGRESSWOMAN FROM THE TERRITORY OF GUAM

MS. BORDALLO: Thank you very much, Vice Chairman Wortzel and Commissioner Videnieks, and other members of the Commission, ladies and gentlemen.

I want to thank you for the opportunity to testify this morning about the implications of China's naval modernization for the United States.

The issue of China's naval modernization is one that garners significant attention and concern in the Asia-Pacific region. China's naval modernization raises concern among many experts in the United

States because of the perceived lack of transparency in their modernization plans.

Moreover, certain weapons' development, like the advanced anti-ship cruise missiles or construction of an aircraft carrier, seem to directly target the sovereignty and the projection of our naval forces in the Asia-Pacific area.

Despite these misgivings, I believe that greater military-to-military cooperation, training and education will be important to developing stronger and broader relations with the People's Republic of China.

The United States Pacific Command under the leadership of Admiral Timothy Keating has taken significant steps to increase bilateral relations with the People's Republic of China in recent years. For example, PRC military officials were asked to view Operation Valiant Shield exercises in the Western Pacific in 2006. Additionally, high-ranking U.S. military officials have visited China and viewed some of their training, which has increased a cultural understanding between our two countries. I believe that this approach of constructive engagement will help to develop a greater understanding between our two countries.

This cooperation and greater cultural understanding can further be bolstered through a greater partnership in deterring piracy in the Asia-Pacific region. The current deployment of many of the Navy's Fifth Fleet to the Horn of Africa coupled with media reports may leave the impression that piracy is only an issue for the Indian Ocean and Africa.

But to the contrary, this remains an area of grave concern in the Pacific as well. So I believe that there is ability for the PRC and the United States to develop a greater partnership in patrolling against piracy in the Asia-Pacific region. Such a joint venture would only further enhance understanding between our two militaries, it would also serve as a deterrent to the issue of piracy in this region of the world.

Although increased cooperation and understanding is important, we must also ensure that we do not neglect our international and military responsibilities in the Asia-Pacific region. The realignment of some 8,000 Marines from Okinawa to Guam along with an increased Navy, Air Force and Army presence on Guam is important towards reiterating our support for our allies in this region.

Realigning forces to Guam affords the United States with the freedom of movement and access that does not currently exist. The U.S. military's emphasis on bolstering military forces in Guam is strategically important and emphasizes to our allies that we are committed to their protection and serves as a significant deterrence to

potential adversaries.

While I believe that greater cooperation between the PRC and the United States is important, we cannot ignore our responsibility to show China that we are committed to providing security for our nation and our interests in the region.

The United States must maintain a strong forward presence in the region as a reminder to the PRC that we have the commitment and the strength to defend ourselves and also our allies.

I believe our presence in Guam coupled with continued strong relations with the Republic of Korea, Japan, Australia, and New Zealand are key to maintaining stability and peaceful economic growth in this region of the world.

We have a complex relationship with the People's Republic of China. The unique complexities of Chinese culture coupled with the myriad of interests the United States has in this region of the world make analyzing our relationship difficult.

It has been easy in the past to simply cast China as a friend or as a foe. This type of analysis is not helpful in the complexities of the 21st century. The reality is that our relationship with China is complex, and broad-brushed analogies serve little purpose.

On the one hand, we are tied together economically while, on the other, we compete for natural resources.

I would urge the Commission to review the Chinese naval modernization with the understanding of the complex dynamics of our relationship. As a nation, we must both increase our understanding of each other culturally and militarily while simultaneously ensure that our forces and our diplomatic presence are postured to maintain our influence in this region.

While we have little control over China's naval modernization, we have great control over our nation's response to it based on our mutual economic interests with China and our commitment to our allies for regional peace and stability.

So, again, I thank the Commission for the opportunity to testify today on this very important issue. Thank you.

VICE CHAIRMAN WORTZEL: Thank you very much, ma'am.

I don't know how your time is. Do you have time to respond to any questions from commissioners or are you off to--

MS. BORDALLO: Well, I am on a tight schedule.

VICE CHAIRMAN WORTZEL: We'll let you go then. Thank you very much.

MS. BORDALLO: All right. Thank you very much.

VICE CHAIRMAN WORTZEL: I appreciate it.

HEARING COCHAIR VIDENIEKS: Thank you.

VICE CHAIRMAN WORTZEL: We're going to take a break here.

I think Congressman Forbes is supposed to be here soon, so we'll take a short recess.

[Whereupon, a short recess was taken.]

HEARING COCHAIR VIDENIEKS: Thanks, Congressman, for coming here this morning.

MR. FORBES: Well, thank you, Pete.

HEARING COCHAIR VIDENIEKS: I will read a short description of your background and experience for the record.

Congressman J. Randy Forbes represents the diverse and expansive Fourth Congressional District of Virginia. Mr. Forbes was elected in a special election in 2001. He is now serving his fourth term in the U.S. House of Representatives.

Mr. Forbes focuses his efforts in Congress on protecting the security and sovereignty of our nation, preserving the moral and historical roots of our country, strengthening our military and supporting veterans, growing educational opportunities for our children, and promoting economic development through fiscal responsibility.

He serves on the House Armed Services Committee, where the Congressman works to provide our military with the proper tools, facilities and training to be the most effective military in the world.

The Congressman serves as the Ranking Member of the Armed Services Readiness Subcommittee, which oversees the Base Realignment and Closure, or BRAC, process.

In addition, Congressman Forbes was awarded the U.S. Navy's highest civilian honor, the Distinguished Public Service Award, for his committed service and leadership in advancing the U.S. Navy.

Congressman Forbes is also the founder of the Congressional Modeling and Simulation Caucus, the Congressional China Caucus, and a cochair of the Navy and Marine Corps Caucus.

Thank you.

STATEMENT OF J. RANDY FORBES A U.S. CONGRESSMAN FROM THE STATE OF VIRGINIA

MR. FORBES: Thank you, Pete.

Thank you. Let me thank you all for what you do, and I don't say that just because you've been kind enough to let me come talk to you. You have always been on the cutting edge, I think, on our relationships between the United States and China, and if anyone has the right to come in and say "I told you so," it's always this Commission. And yet, you don't do it. But I thank you so much for your work and continuing to hang in there.

As I look at testimony that you will receive, I know you'll have

some very, very qualified experts that come in and talk to you about what we're seeing in the military build-up in China, but I suggest that every once in awhile, we need to just take a step back because sometimes we kind of get an institutional inertia which makes it difficult for us to look at the bigger picture because we have had this historical carryover of a mindset of how we analyze our relationship with China or what we see happening with their military.

I always like to bring it back just to the Revolutionary War. If you had the greatest power in the world that came over here to pay us a visit. They thought everything was going to be fought with bright colors and everybody was going to be marching lock-step in particular filings that would be walking down well-lit roads, and they really never assessed the fact that people might shoot from behind trees or behind fences or in ditches.

The result, of course, was Yorktown, and one of the things we don't want to see is a reverse Yorktown where we're on the short end of that stick.

It has always been very difficult, if you look at our analysis of China, either militarily or any other way. We have always underestimated them, and our forecasts have under-forecasted I think where they have been, and I think there's a couple of reasons for that. One of the reasons is because we just don't have a lot of the concrete evidence we'd like to have, and so we take what evidence we do have and we extrapolate from there.

The problem is we don't always have the same mindset that they have when we're extrapolating that evidence. So we sometimes end up with different end lines than what really happens.

For the longest period of time, when we sat down with our military, and we asked them to evaluate the Chinese military and our military, we always heard there was no contest, and the reason was because they were matching platforms on platforms, and all of you remember that. You've heard that for years, and so we would estimate in the early 2000s, that China could never be an equal to us because we'd take the fact we had carriers and they didn't have carriers, we had more subs, we had better subs, we had different kinds of planes, different kinds of pilots, and that's how we would measure it.

In fact, if you remember, in 2002, DoD reported in its Annual Military Power Report on China that it appeared that the Chinese had set aside plans to acquire an aircraft carrier indefinitely. And some of you remember--because I've had an opportunity to talk to you--way back then we were saying China is going to build carriers because you could see the kind of steel they were producing and how they were setting them up, and yet the military was continue to say no, no, they've set those plans aside.

The report said the same thing in 2003 and then, as you know, in 2004, it said nothing. Well, now, there's no one in here that doubts really that China is on its way to building aircraft carriers, I think.

Also, we see China is rapidly increasing their capability to compete platform on platform. If you take a snapshot of our ships now, about 287 ships that we've got, and China's got 260, but the real key is we've got 251 active and commissioned right now.

What also concerns me is they've got the largest defense budget in the world. Now, as you know, it's officially at \$85 billion compared to our \$600 billion, and that's what everybody always talks about. But you remember in 2007, the CIA estimated that China's defense budget was almost ten times what they reported it to be because of the lack of transparency.

In that particular report, China was looking at reporting about a \$45 billion defense budget, so they—the CIA--was extrapolating it would be about \$450 billion.

If you take this \$85 billion, and you put the same numbers on it, you'd be looking at \$850 billion. I'm not saying that's an accurate figure. I don't know, you don't know, probably nobody knows, but I'm saying even if you half that, you get some pretty significant dollars that are being spent for their military, much larger than we oftentimes expected.

In October 2007, a Chinese diesel submarine surfaced extremely close to the USS Kitty Hawk. All of you are familiar with that. But what was less reported is the fact that the Chinese sub passed at least 12 of our U.S. flag ship warships in the process, and that's something that we need to just step back and say wait a minute, how is that happening? What's going on?

In the littoral areas where diesel submarines thrive, for the longest time I've heard us kind of beat on our chest in a good way and say wait a minute, their ships, their subs don't have the same capacity as our subs, but right now they've got 50 diesel subs to our zero in the littoral area, which is a huge concern for us to be thinking about.

The other thing is many of us have talked about for the longest time that if China were to have a conflict with us, it probably wouldn't be platform on platform. It would be a lot of asymmetrical stuff, and so we have to constantly be looking at the asymmetrical threats. Our greatest concerns there, is of course, cyberwarfare. We know what they're doing there, at least we know the directions that they're going--anti-denial missiles and submarines that we see them moving towards.

And also, of course, all of us are familiar with the espionage and intellectual property theft. The FBI Director has testified that China is without a doubt now the greatest espionage threat facing our country. They are getting materials not just from our industrial

complex, but also, as you know, from private industry. I don't know what they do with all the information, but we know they're acquiring huge amounts of that information.

The FBI and Justice Department have had cases related to China stealing nuclear weapons' design, designs for our most advanced fighters, information on arms sales to Taiwan, reports on the Chinese military, allegedly received from Washington, D.C. liaison from U.S. Pacific Command, which would oversee any conflict with China, and hacking of congressional offices.

We also know that China is also actively developing and deploying anti-ship ballistic missiles that would have a range of over 900 miles and could put U.S. aircraft carriers operating in the Western Pacific at risk. A recent news article called this missile the "game changer," and I'm sure you're familiar with that.

What's of concern to me is eight of the last 12 diesel Chinese submarines have deployed with the "Sizzler" missile. Those diesels are very, very quiet, and very, very difficult to detect and to monitor. And we don't know if we can defend against the missile which travels, as you know, at high speeds just above the water before undergoing several maneuvers to avoid being followed by radar or intercepted.

But the Chinese submarine force sophistication, the anti-ballistic missile capabilities, and the acquisition of the carriers seem to play against U.S. capabilities, and we certainly have to monitor that and continue to look at it.

The other thing that I think is important is that we continue to assess is we constantly not only need to be looking at where China is going, but we also need to be looking at the direction the United States is going. So if we're both growing and just having a race to see who gets there first, that's one thing, but if they're increasing at the time that we're decreasing, that should be a concern to us.

I am very concerned about this year. When we had the budget presented to us, I believe we've seen a sea change beginning to take place in the United States. I throw that out for your examination and to look at it, but I think with the budget area concerns that we have, we're beginning to see the budget driving defense strategy instead of defense strategy driving the budget, and that should be a concern for all of us.

We have to get our risk and our defense strategies out on the table, then step back and say what we can afford and what can't we afford. But I'm very concerned because for the first time, despite the fact that statute requires it, we've got a situation where a budget has been presented to us.

The statute says that the Secretary of Defense is supposed to present us with a shipbuilding plan, and also a certification that the

budget presented--because, as you know, the tentacles of that budget are so vast that it's difficult for anybody to really get their hands around it--but that's why the statute says we're supposed to be presented a shipbuilding plan with a certification by the Secretary of Defense that that budget will meet that shipbuilding plan or list the risk that we take for not doing it.

This year there has just been a refusal to submit that shipbuilding plan so as I come before you today, I can't tell you whether we've got a good plan, a bad plan, or no plan at all because no plan was submitted over to us, and, secondly, I can't tell you whether the budget that we have is going to drive that plan because I don't have the plan to show it to you.

I think that's a huge concern for us and should be in terms of our budgeting and our forecasting.

The other thing that I want to just put out to you, and I make no editorial comments of whether this is good or bad--it's just factual--with the bailouts that we have been spending and with the stimulus packages that we have laid down.

Years ago, my oldest son met a little girl from Mississippi, and he ended up marrying her, and he was working in D.C. for about two or three years, and he came to me one day, and he said, Dad, what do you think about me moving back down to Mississippi and working? And I put my hand on his shoulder, and I said, son, that decision was made three years ago when you said "I do." It's just a matter of the timing.

Well, I think, what frightens me is that as I look at some of our expenditures now, we are making decisions that when we all meet three years down the road, four years down the road, five years down the road, we're going to all say to each other, that decision about carriers, planes, on ships that we made two, three, four, five years ago, and it's kind of out of our hands now.

And let me just kind of give you the package on that. If we took just the interest alone on the bailout and stimulus package--forget anything with the budget, just the bailout funds--we would have the amount equal to the entire budgets for all of NASA, all the National Science Foundation, all the Department of Interior, the Department of Labor, the Department of Commerce, all the FBI, all the Department of Justice, every operation of the White House, every operation of Congress, and every Army Corps of Engineers' project in the country.

Now, again, I don't say that with any editorial comment. I simply say that as we then go down the road two years from now and three years from now and four years from now, every time I talk to a group of people who think we ought to do something with carriers or with particular ships, I just ask them how are we going to do that if we're having to pay these interest dollars back and the things that

we're doing? Just something we need to step back and take a look at.

The final thing that I think we need to do is, as I mentioned to you, next week Congress will start to deliberate the budget on defense, and my review of this budget leads me to believe that we're focused on the war at hand, the conflicts in Afghanistan and Iraq, and this, coupled with comments from the Secretary and other DoD officials, leads me to believe that the balance of our strategy is starting to lean towards counterinsurgency or irregular warfare over conventional conflicts, and I fully expect the QDR to follow suit with that. If it does, I think that does not bode well for our match-up with China over a ten, 15, 20 year period.

A final thing I'll just leave you with is what I just said. I think oftentimes the decisions that we're making today are going to determine the kind of navies and match-ups that we have five, ten, 15, 20 years down the road. That's why I salute you for at least raising the questions, putting them on the table. Hopefully, we'll all make wise decisions that will protect the greatest nation the world has ever known.

And with that, Mr. Chairman, I deliver it back to you and thank you for the opportunity to be here.

Panel I: Discussion, Questions and Answers

VICE CHAIRMAN WORTZEL: Thank you very much, sir. We appreciate your time. If you're available for questions, I have one.

MR. FORBES: Yes, sure.

VICE CHAIRMAN WORTZEL: And I'm sure some of my colleagues have questions, too. You mentioned the new Quadrennial Defense Review. The last one actually moved extra forces out into the Pacific, and reinforced Guam. Ms. Bordallo raised the point that there's 8,000 Marines moving down to Guam, and at the same time, we know that the Chinese Second Artillery Corps is developing new classes of ballistic missiles that could begin to target Guam. They have some older ones that will do this, some bigger ones.

Are you comfortable with the ballistic missile defense posture that we have and that you see coming?

MR. FORBES: I'm very concerned about our entire missile defense posture that we have. First of all, we are having huge cuts this year in missile defense systems. It's at a time when I really worry about some concerns that I have that I could lay out. Guam is one of them.

Years ago, I visited with Ms. Bordallo. Actually we went to Guam before the move was in place. One of the things that I looked at, the first thing, and showed her and showed the governor there, was

the fuel tanks that are just sitting out there unprotected because if you take those fuel tanks out, we learned from World War II, you don't fly planes and you don't fly our bombers out of there, and they're very, very exposed and very easy to hit.

That worries me, number one. Number two, I think we see this activity that's growing up, and again it's not just China, but it's China, it's North Korea, it's Iran. Everyday we're seeing a new test; we're seeing new movements towards nuclear weapons.

I will have to take just a little bit different tact than we oftentimes take on missile defense. It's not just a conflict that could happen with China and missiles, but the other thing that I think is very concerning to me is I don't believe ultimately a North Korea or Iran launches a missile against the United States from North Korea or Iran.

I think where we probably find them launching that is from a ship somewhere out in the Atlantic or the Pacific, and then they destroy the ship, and where are the fingerprints on how to go back and how to get it?

If we can have terrorist bombers that are willing to come in and give up their lives to bomb facilities, we can certainly have people in ships that are willing to send those ships down and launch that missile.

They don't have to be accurate. They just have to be launched, and they have that capability today.

So I think rather than cutting back on our missile defense systems, I think it's important that we continue to explore how we protect our coastlines, as well as protecting Guam and some of the areas that we have there, because I think if you talk to most of our military, they're very, very concerned, not just about a conflict that we could have with China, but also about something that could take place on a rogue situation and whether we have defenses for that.

Final thing I'll tell you, a lot of people talk about "but we need to be careful about all this discussion and talk about missile defense because maybe it creates conflicts." One of the worst things we can do is let the Chinese underestimate our strength and overestimate their strength because that can at some times precipitate actions rather than quiet them down.

So I think that's an important thing that we continue to have those defenses. So that would be my feeling, Larry.

COMMISSIONER MULLOY: Congressman, thank you very much for being here.

I can remember our first time we came over to the House and met with you. What we try to do on this Commission, I always tell people, is like Joe Friday in the old Dragnet series: we don't come with preconceptions; we just get the facts.

MR. FORBES: That's right.

COMMISSIONER MULLOY: And then the facts lay out what the situation is. And one of the facts I've always seen here is this imbalance in the economic relationship. It means to me that the United States is transferring a lot of wealth and power across the Pacific Ocean which now shows up in China's ability to grow its military.

Do you have a sense that there's a realization now in the Congress that this situation is there, and that the imbalance is something that we really have to pay a lot of attention and find ways to address in this Congress?

MR. FORBES: First of all, I thank this Commission, because you do get the facts, and facts drive questions, and sometimes I think what we've had in the past is we don't get those facts out, just have the clearinghouse to ask the questions.

Second thing, your question really has two parts to it, is whether or not Congress is really recognizing the shift that we've had in terms of wealth, in terms of the debt situation that we have with China, and the seriousness of that, one, but, secondly, are we prepared to deal with that and do something about it?

I think the answer to the first part of that question is clearly yes. That's becoming very obvious I think to the average individual on the street across the United States where it wasn't just ten, 15 years ago. I think as far as our willingness to deal with it, I question that because I just don't see the policies where we're implementing to do that, and I haven't seen them for a period of time.

I think that dollars do drive things. One of my big concerns as I look at our match-up militarily is I look at the strength where we're seeing with China going. You can read the articles the same as I do. Many people are talking about China leading the way out of this recession now, not the United States. You're seeing that around the world, not just with us.

I think the second thing is that not only do we have this transfer, but I think we miss a lot of times the influence that China has on our policies here in the United States, and they do it in a very indirect way.

When you walk out in the hall, you're not going to see Chinese lobbyists walking up and down, knocking on doors very often, but what you see it is with the location of a plant or you see it with the location of some trade situation that we have going with some major company that we have, and then, all of a sudden, the kind of indirect pressure to say, well, it might be better if this policy didn't take place because it might affect the trade situation that we have and perhaps the pricing that you do.

I think that's a lot stronger than what we realize sometimes in

those indirect relations on our policies. So I am concerned and do not feel that we're as aggressive as we should be on some of those kinds of things.

Let me just give you one last example of that. If you just took our ability to compete with China, we can compete if we can just get a little bit of a level playing field. I think their denial of access to our companies is a huge problem. When you look at the motion picture industry, as all of you know, and they get to pick 20 films, and they get to pick which films are going to be shown in China, and then by the time they're shown they're going to have DVDs at 80 cents apiece on the street, that's not really competition.

The second thing that I think is important to realize is the tax posture between the two. As you know, just recently, China dropped their taxes, lowered their taxes. Their car sales went up by about 25 percent. We didn't have the same result because we didn't--we raised our taxes.

And then when you look at the intellectual property situation and the amount of money that's being taken out of the United States because of that intellectual property situation, I think that's a huge shift that's going to have an impact to us, one, whether they directly do it or just talk about doing it, has economic impacts on the country that is going to hurt our industrial base and hurt our ability to produce the kind of navy that we want five, ten years down the road.

COMMISSIONER MULLOY: Thank you very much for your testimony here today and your support and interest in the work of this Commission, Congressman.

MR. FORBES: Thank you. Thank you very much.

VICE CHAIRMAN WORTZEL: Commissioner Wessel.

COMMISSIONER WESSEL: Thank you, Congressman.

It's good to see you again.

MR. FORBES: Good to see you.

COMMISSIONER WESSEL: It's always a pleasure, and your interest, as Commissioner Mulloy said, in this Commission is deeply appreciated. You are our client; we work for Congress. So the interest that you've had, the help of your staff over the years in terms of helping us define what our work plan is and how best to respond to you is deeply appreciated.

I want to ask you a question about the lack of transparency and your work on the Armed Services Committee in terms of military-to-military contacts and the value you think we're getting out of that.

When we get briefed, it appears it's somewhat as with warfare, somewhat asymmetric. The Chinese seem to get a lot more information from us than we are able to garner from them.

In regards to that naval build-up, as you know, our analysts seem

to be surprised quite often about Chinese advances. What is your view of the military-to-military contacts? Are we doing it the right way? Should we be altering course, continuing on the present course? What should we be doing?

MR. FORBES: I think our military-to-military contacts are good. I think that we just can't walk in with an illusion that we're going to get information out of them. The Chinese are very, very good at giving us the information they want us to have, and they're good at soliciting information that they want. We just have to lay the cards on the table: they're better at that than we are.

And we haven't been able to break through that matrix yet, but I think the military-to-military is working out about as well as probably our reasonable expectations should be that we should have it.

One of the things, though, that I would say is very deceptive, is when we talk about these hotlines and how we're going to direct hot--the problem has never been getting the lines through. The problem has been getting them to answer the lines, and as many of you know, many times when we have a major conflict where you would want that to happen, even if you've got the technology hook-up, they're just not answering the phone. So you're calling and so it defeats its purpose.

One of the things that I do think, though, is that we have a transparency problem, not just with how we deal with information we get from China, which certainly has no transparency in that, but also with how we communicate with each other, and again, I throw out this year because all of us are concerned about what our Navy looks like, not just what the Chinese Navy looks like, and for this year alone, when you talk about in our budget, the Secretary of Defense issuing a gag order effectively for hundreds of people at the Pentagon, to say don't talk to even members of Congress about budget cuts and where they are, that should be concerning to everybody because they're the ones with the expertise.

When you say that we're going to have INSURV inspections now going to classified situations, what that means is, of course, we can get the information, but we can't tell the public the shortfall in maintenance on some of our own vessels.

And then the third thing, of course, as I mentioned to you, when you just refuse to send over a shipbuilding plan or an aviation plan, that's very lack of transparency.

Now, I'm not pointing fingers or saying anybody's bad in doing it. I'm just simply saying we need to not only look at transparency with China and how we're measuring their Navy; we need to be looking at transparency with all of us as how we're putting the cards on the table to build our own navy because it's important that we monitor both and look at both very carefully.

But I think the military-to-military contacts, I've never had as high expectation as sometimes I think people talk about us getting with that. I think it's always good to have a dialogue. I have a dialogue with members of their congress, with their ambassador, with other people, and yet I take very, very strong stances with them, but I think we should still continue to sit down and talk, efforts to do that.

VICE CHAIRMAN WORTZEL: Sir, thank you very much for your time.

MR. FORBES: Well, thank you all for all your work.

VICE CHAIRMAN WORTZEL: It's great to have you here. We're going to seat the next panel and start within about two minutes.

[Whereupon, a short recess was taken.]

PANEL II: STRATEGIC IMPACT OF PLA NAVAL MODERNIZATION

VICE CHAIRMAN WORTZEL: Our first expert witness panel is indeed a distinguished one. We have Rear Admiral Mike McDevitt, Mr. Peter Dutton, and Mr. Paul Giarra.

The first speaker, Rear Admiral McDevitt, is a Vice President at CNA, formerly the Center for Naval Analysis. It's a Washington, D.C. area non-profit company and he runs the Strategic Studies division there.

He's been involved in security policy and strategy in the Asia-Pacific for the last 20 years. He was the strategist out in the Pacific Command. He ran the policy shop on Asia for the Office of the Secretary of Defense for East Asia, and he's just wonderful on the subject. I look forward to hearing from him.

Our next speaker, Mr. Peter Dutton, is Associate Professor of Strategic Studies at the Naval War College's China Maritime Studies Institute.

He focuses on Chinese and American views on sovereignty and international law of the sea and the strategic implications for the United States Navy of Chinese legal and policy issues.

He retired from active duty in the Navy with the rank of commander. Again, I don't know anyone that does a better job on this topic, and we appreciate your being down here.

The final speaker is Mr. Paul Giarra. He's the President of Global Strategies and Transformation, and he provides national security strategic analysis, defense concept development, military transformation expertise, and strategic services and applied history really as a planning tool.

He's been a strategic planner and security analyst on Japan, China, East Asia, and NATO futures. He's had a wonderful Navy

career as a naval aviator and strategic planner, and was a political-military strategist for the Far East, and managed the U.S.-Japan alliance for the Office of the Secretary of Defense.

Admiral McDevitt, and for all of you, we ask that you try and limit your oral testimony to seven minutes. There's a little timer that will show time in red, and then I can assure you that after that, there will be plenty of time for question and answer.

**STATEMENT OF RADM MICHAEL McDEVITT (USN, Ret.)
VICE PRESIDENT & DIRECTOR, STRATEGIC STUDIES
CNA, ALEXANDRIA, VIRGINIA**

RADM McDEVITT: Thanks, Larry.

I'm going to read my commentary. First, the usual disclaimer: these are my views and should not be construed as representing the views of either CNA or the Department of the Navy.

To begin, East Asia has been relatively stable and the security environment predictable since the end of the Vietnam War. One of the most important reasons for this long period of stability is that a real military balance has existed between the continental powers of Asia, China and Russia, and United States and its maritime oriented friends and allies.

For a long time, the military capability of each side prevented any attempt by the other side to intrude in a militarily destabilizing way into the other's domain.

The continental powers were safe from invasion thanks to large armies, vast territories, nuclear weapons; whereas, U.S. friends and allies were safe from invasion and maritime blockade thanks to U.S. and allied air and sea power.

A significant new development is that this balance is in the process of change because the economic development of China has introduced a self-assured, rich, and increasingly powerful power into the Asian strategic mix, a China that is interested in moving to sea in a militarily significant way.

As China improves its military capabilities in order to guarantee its security and field a military establishment worthy of a great power, it is in the process of undermining the existing continental maritime balance I have just described.

For the first time in over two centuries, China is wealthy enough to finance a systemic and well-conceived modernization that has already made the PLA because of its size and pockets of excellence, such as its submarine and missile forces, the premier Asian military.

Because China has a number of unresolved sovereignty issues off its eastern seaboard, which are all maritime in nature, Taiwan being the most significant, China has adopted a military concept of operations aimed at keeping an approaching force from closing to within striking range of the Chinese mainland and the Taiwan Strait.

Specifically, China's concept is to deny the U.S. military access to the region so we cannot interfere if China should choose to use force to resolve any of its outstanding maritime strategic issues. The PLA Navy plays an important role in this concept, but it's important to keep in mind that this denial strategy is joint, in that it involves also the PLA Air Force and the PLA Second Artillery.

To execute this strategy, the PLA is knitting together a joint structure that is composed of a very effective open-ocean surveillance system used to locate approaching naval forces so that they then could in turn cue attacking land-based aircraft armed with cruise missiles, submarines with torpedoes and cruise missiles, and eventually with conventionally-tipped ballistic missiles that are able to hit maneuvering ships.

Starting in 2001, the Department of Defense has characterized this approach as anti-access. The strategic implications of this for U.S. national strategy are potentially very serious. By gradually improving its capabilities to operate offshore in the maritime domain, albeit for strategically defensive purposes, China is beginning to intrude into the region that has been the preserve of the U.S. and its allies for the last-half century.

Left unaddressed this will have an effect of upsetting the decades-old balance of power that had been so successful in preserving stability. It's also making the security situation for its northeast Asian neighbors, Japan, for example, worse. The efficacy of the U.S. strategic position in Asia depends upon America's ability to use the seas to guarantee our security and the security of our Asian allies and pursue our national interests.

I suspect that the United States will not stand idly by and permit its projection capabilities to be called into question by China's access-denial concept. In fact, over the past four years, the Department of Defense has quietly taken steps to ensure that it rises on the same tide of capabilities as China. As China gets better, the U.S. has been trying to keep pace, keeping the "delta" of advantage we already possess so we're able to assure access.

This is not going to be a one-shot effort. It's going to be an ongoing process because China's capabilities are going to continue to improve. As they get better, so too must we. As a result, the U.S. and China will be engaged in a long-term capabilities competition that will pit China's access-denial capabilities against U.S., the U.S.

requirements it needs to assure access. In other words, we have competing concepts: denying access versus assuring access.

I do not consider this an arms race, although some people may accuse me of just trying to be clever in terms of wordsmithing, because it really is a competition between capabilities. If China is successful or, more importantly, is perceived by the countries of Asia as being able to deny the U.S. access, China's concept of operations will unhinge our long-standing East Asian strategy because it will call into question America's ability to act as a security guarantor to our friends and allies and our ability to provide stability to the region as the only country capable of balancing China.

That concludes my oral statement.

[The statement follows:]

**Prepared Statement of RADM Michael McDevitt (USN, Ret.)
Vice President & Director, Strategic Studies
CNA, Alexandria, Virginia**

For this hearing on China naval modernization I have been asked to address five specific questions. Before I do that I want to provide the context that shapes my views.

Because Secretary of Defense Robert Gates straddles both the Bush and Obama administrations his comments at last years (2008) Shangri-la Dialogue in Singapore provide an important element of continuity when considering US security interests in East Asia. In his speech, Gates defined the United States as “a Pacific nation with an enduring role in East Asia,” one standing “for openness and against exclusivity” and committed to “mutual prosperity.” Noting that American territory in the Pacific Ocean extended from the Aleutian Islands to Guam, Secretary Gates defined the United States as a “resident power” in the region.¹

While it is true that the United States is a “resident” Pacific power it is also true that the that the Asia-Pacific neighborhood they reside in *is in the midst of profound strategic change*. This is a major development for those who must execute US security policy since Asia’s security environment has been relatively stable and predictable since the end of the Vietnam War.

One of the most important reasons for this long period of stability is that a real military balance exists between the continental powers of China and Russia and the United States and its maritime oriented friends and allies. For a long time, the military capability of

¹Secretary of Defense Robert Gates, speech, Shangri-la Dialogue, Singapore May 31, 2008, www.defenselink.mil/speeches/speech.aspx?speechid=1253 . The author attended this conference and heard this speech.

each side prevented any attempt by the other side to intrude in a militarily destabilizing way into the others domain. The continental powers were safe from invasion, thanks to large armies, vast territories and nuclear weapons. US friends and allies were safe from invasion and maritime blockade thanks to US and allied air and sea power, which is backstopped by the US nuclear arsenal.

This period of geo-strategic military stability, i.e., absence of major aggression provided the opportunity for virtually all of the nations of the region to focus on internal political stability and on economic development. A significant new development is that this balance is in the process of change because the economic development of China has introduced a self assured, rich, and increasingly powerful power into the Asian strategic mix--one that is interested in “moving to sea” in a militarily significant way.

As China improves its military capabilities in order to guarantee its security and field a military establishment worthy of a great power it is in the process of undermining the existing continental-maritime balance. For the first time in over two centuries, China is wealthy enough to finance a systemic and well-conceived modernization that has already made the PLA, because of its size, and pockets of excellence such as its submarine and missile forces, the premier Asian military.²

Because China has a number of unresolved sovereignty issues off its Eastern seaboard, which are all maritime in nature (Taiwan being the most significant), China has adopted a military concept of operations aimed at keeping an approaching force from closing to within striking range of the Chinese mainland and Taiwan Strait. Specifically, China’s concept is to deny the US military access to the region so it could not interfere with a PLA use of force to resolve any of its outstanding maritime strategic issues. The PLA Navy plays an important role in this concept, but it is important to keep in mind that this is a “joint” concept that also involves the PLA Air Force and the PLA Second Artillery Force.

To do this the PLA is knitting together a capability that is composed of a very effective open-ocean surveillance system used to locate approaching naval forces so they can be attacked by land-based aircraft armed with cruise missiles, by submarines with both torpedoes and cruise missiles and eventually with conventionally tipped ballistic missiles that are able to hit maneuvering ships. Starting in 2001 the Department of Defense has characterized China’s approach as an “*anti-access*” operational concept.³

² For a comprehensive and authoritative discussion of Chinese military modernization see especially the Department of Defense’s, *Annual Report to Congress: Military Power of the Peoples Republic of China*, the 2008 report along with pdf versions of the previous seven years worth of reports can be found at www.defenselink.mil/pubs/pdfs/China_military_report_08pdf. Other official sources include the Department of Defense, *Quadrennial Defense Review Report*, February 6, 2006, www.defenselink.qdr/report/Report2006203.pdf

³ Anti-access is a US coined term, first introduced in the 2001 Quadrennial Defense Review, that is now

Question One: What are the Strategic Implications of PLA Naval Modernization on US National Security?

By gradually improving its capabilities to operate off-shore, in the maritime domain, albeit largely for strategically defensive purposes, China is beginning to “intrude” into the region that has been the preserve of the United States and its allies for the past half-century. Left unaddressed, this will have the effect of upsetting the decades-old balance of power that has been so successful in preserving stability in the region.

The efficacy of the US strategic position in Asia depends upon America’s ability to use the seas to guarantee the security of our East Asian allies and pursue American national interests. I suspect that the US will not stand idly by and permit its deterrent and projection capabilities to be called into question. American will ensure “it rises on the same tide” in terms of capabilities necessary to continue to assure access. As China’s capabilities improve so too must America’s.

As a result the US and China will be engaged in a long term “capabilities competition” that will pit China’s access denial capabilities against those that the US needs to assure access. If China is successful, or is perceived as being successful, in this competition China’s concept of operations will unhinge America’s long-standing East Asian security strategy that ultimately depends upon assured access to the region.

Question two: What effect is PLAN modernization having on the East Asian regional security situation?

The China factor in the evolving Asian security environment presents most of China’s neighbors with a strategic problem. By attempting to achieve security on its maritime frontier, Beijing is creating a dynamic that as its security situation improves, it is making the security environment for many of its neighbors worse because a central element of its strategy in case of conflict is to keep US power as far away from East Asia as possible.

commonly used to characterize attempts to militarily defeat both US air forces that based within striking range of the Taiwan Straits and approaching US Navy Aircraft Carrier Strike Groups sailing to the defense of Taiwan. See for example, Ronald O’Rourke, “Chinese Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress,” *CRS Report for Congress*, Order Code RL33153, October 18, 2007. p. 1. According to the PLA’s *Science of Military Strategy* the Chinese characterization for what we term anti-access is “offshore defense” where both the PLA navy and Air Force play central roles. The PLA Navy is charged with developing the “strategy of offshore defense” while the PLA Air Force is charged with the “strategy of offensive air defense.” See also Michael McDevitt, “The Strategic and Operational Context Driving PLA Navy Building,” in Roy Kamphausen and Andrew Scobell, eds., *Right Sizing the Peoples Liberation Army: Exploring the Contours of China’s Military*, p 481-522, Strategic Studies Institute, U.S. Army War College, Carlisle, PA August 2007

The economic relationship that each nation has with Beijing is central to the economic well being of both all parties. Yet, at the same time Beijing's military modernization presents a security challenge. For example, in the case of Japan the possibility that China's anti-access capabilities, largely its submarine force, could isolate this island nation. This is a real strategic threat to Tokyo. For Japan this problem is not abstract, US submarine operations in WW II provided them with a real world lesson on vulnerability.

Similarly, South Korea worries about its sea lane security, and as a result is in the process of building a very capable blue-water navy. This is a real strategic departure for the Koreans whose modern military culture is, and has been, Army dominated because of the conventional threat from the North. The growth of the PLAN and the ROK's dependence on maritime commerce has been a factor in ROK calculations that has justified a much larger share of the defense budget for the ROK Navy.⁴

Question three: How Does China's unique view on the EEZ impact on regional security?

By attempting to concoct a new legal reality in international law by confronting legitimate military/naval activities in and above its EEZ China is consciously creating dangerous encounters when its ships and aircraft depart from international accepted "rules of the road." At sea, these long established rules are intended to introduce predictability into the maneuvers that ships follow when they encounter one another on the high seas.

Chinese encounters with the USNS Impeccable and others have amounted to dangerous harassment. The Master of Impeccable had to deal with Chinese ships and craft maneuvering in unpredictable ways—a sure recipe for a collision. We have already been through one crisis of this nature when a PLA naval aviator badly misjudged and caused an air-to-air mishap with a USN EP-3 in 2001.

Any crisis of this sort is bad for regional security since it raises tensions and introduces a sense of military confrontation between the US and China at the very time that the most plausible Sino-US flashpoint, a confrontation over Taiwan, is growing less likely. It also reinforces the views of many in the region that ultimately China will use its new military capabilities to push its neighbors around; thereby undermining China's "peaceful development" public diplomacy campaign.

⁴ The Government of South Korea has "discovered" the importance of SLOCs. They have come to appreciate that in the era of globalized economies, the ROK is a virtual island country. Today, the ROK is the world's 12th largest economy and 10th largest trading nation. Foreign trade represented approximately 70 percent of its 2006 GDP, and a whopping 99.7% of South Korea's trade is conducted via sea routes. Some 100 percent of its crude oil, 90 percent of its raw steel and 73 percent of its food comes via ship. A Korean colleague made the point to me that "It is no exaggeration to say that protection of South Korea's SLOCs is a life and death issue for the Republic."

Question four: What is the strategic impact of PLAN surface fleet development on regional and US national security interests? Of PLAN submarine development?

The most obvious strategic impact of its surface force development is during peacetime, when both the US and other East Asian countries will increasingly encounter PLAN ships on the high seas throughout the region. The PLAN will be out and about.

In the not very distant future I expect to see the PLAN surface force engaged in the sorts of routine peacetime activities that the USN and other maritime powers have done for decades—showing the flag in support of Chinese diplomatic and strategic interests, responding to natural disasters with aid from the sea, providing humanitarian assistance to the region, and providing a tangible symbol of support to regional friends and allies in case those third parties are under pressure from the United States or other regional powers.

In this last case, PLAN presence on the scene when Beijing and Washington disagree over the activities of countries that are considered friends of China will complicate US strategic calculations and could very easily shape US courses of action. In other words, for the first time since the collapse of the Soviet Union US decision makers will soon have to take into account a potentially dangerous naval presence in proximity to US naval forces, or in the territorial seas of the third party, when Washington elects to use our Navy in a show of force.

PLAN submarines could make this hypothetical scenario even more problematic. The very nature of how a submarine operates is intended to create a great deal of uncertainty about its location. Whereas PLAN surface ships are relatively simple track and do not pose much of a *wartime threat* because of their vulnerability to US forces, PLAN submarines create an operational challenge which could have strategic implications because submarines are so difficult to find and track.

I recall presence operations in the Northern Arabian Sea to influence Iran during the 1980's that wound up dedicating an inordinate investment in operating tempo of USN ships, aircraft and helicopters to try and keep track of the single Soviet submarine that was operating in the area.

Finding and tracking submarines in peace or in war is hard, and takes lots of resources. That is why so many countries in Asia already have and are building more submarines.

Question five: Is there room for cooperation between the US Navy and the PLAN on global maritime security? If so, how?

Yes! This sort of cooperation is on going in the Gulf of Aden where PLAN ships conduct anti-piracy patrols. In these sorts of operations it is important to deconflict helicopter

operations and to pass information on current operations and intentions to prevent mutual interference.

While the PLAN is not a formal member of Task Force 151, which is the anti-piracy task force established by the Commander of the US Fifth Fleet, the PLAN does coordinate its activities with the other forces including the USN. PLAN ships and others in the Task Force exchange information via e-mail and bridge-to-bridge voice radio. In fact, the USN Admiral in charge of CTF 151 and his PLAN counterpart exchanged visits at sea. In fact the PLA recently participated in an anti-piracy coordination conference held in Bahrain.

It is a relatively straight forward proposition to coordinate peacetime activities at sea such as anti-piracy patrols if the political willingness to do so is present on both sides. The anti-piracy patrol is an example of an instance when the national interests of China and the US coincide. So long as national interests are complementary navy-to-navy cooperation is clearly feasible. For example, given the frequency of natural disasters along the East Asia littoral it seems reasonable to anticipate that at some point in the future the USN and PLAN will both be involved in a disaster relief/humanitarian assistance mission.

VICE CHAIRMAN WORTZEL: Thank you very much, sir.
Peter.

**STATEMENT OF MR. PETER A. DUTTON
ASSOCIATE PROFESSOR, U.S. NAVAL WAR COLLEGE
NEWPORT, RHODE ISLAND**

MR. DUTTON: Thank you very much, sir, for inviting me here and your kind words also.

I also must issue a disclaimer that I'm speaking on my own personal behalf and not necessarily representing the views of the Department of the Navy or the Naval War College.

As the questions presented for this hearing suggest, China does indeed articulate a perspective on foreign military activities in its Exclusive Economic Zone, or EEZ, that are outside widely accepted

international law and norms.

However, the views of the vast majority of states remain in alignment with U.S. views concerning legal status of the EEZ. Nonetheless, Chinese legal scholars employ various arguments to justify their government's claim of authority to broadly regulate foreign military activities in the EEZ.

I have addressed some of the particulars in my written testimony. I won't repeat them here, but I would be happy to address any questions the commissioners have on them.

Let me summarize, however, by referring to perhaps what I believe is the most comprehensive and authoritative writing of Chinese perspectives on this topic, which is an article written by two scholars from the China Institute for International Strategic Studies.

Apparently relying on overbroad interpretations of the grant to coastal states of limited jurisdiction in the EEZ by UNCLOS, they articulate the perspective that--and I'm quoting here--"freedom of navigation and overflight and other internationally lawful uses of the sea in the EEZ are no longer freedoms of the high seas in the traditional sense."

They conclude that states no longer have the "freedom to conduct military activities in the EEZ of another state" and that a coastal state has the jurisdictional "right to make laws to restrict or even prohibit the activities of foreign military vessels and aircraft in and over its EEZ."

They argue, in particular, again quoting, "Military and reconnaissance activities in the EEZ encroach or infringe on the national security interests of the coastal state and can be considered a use of force or a threat to use force against the state."

If the U.S. were to accept China's unique legal interpretations of UNCLOS, it would have a significant impact on current U.S. naval activities in part because China claims jurisdiction over nearly the entire East and South China Seas as its EEZ.

In order to enforce its jurisdictional claims, China has embarked on a program of confrontation of U.S. hydrographic survey vessels in China's EEZ, and in the aftermath of the 2001 EP-3 incident also objected to U.S. surveillance and reconnaissance flights in the airspace over its EEZ.

In addition to the legal arguments against foreign military activities in general, in the case of U.S. hydrographic surveys, China also objects on the basis of the grant of jurisdiction over marine scientific research which is granted to coastal states under Article 56 of UNCLOS.

This is another case of an overbroad reading of a jurisdictional grant to coastal states in my view. However, in 2002, China

established its Surveying and Mapping Law, which purports to control all surveying activities, emphasize "all," in the waters under China's jurisdiction. This is a clear reference to China's EEZ.

And the law provides that, quote, "Foreign organizations that wish to conduct surveying in the sea areas under the jurisdiction of the People's Republic of China shall be subject to governmental approval."

Accordingly, Chinese objections to U.S. hydrographic survey activities in the EEZ cite both international and domestic law bases for opposing them.

The Chinese approach to the law of the sea is problematic on several levels. In a strictly legal sense, it's an attempt to carve out a regional exception to the traditional freedoms of access and rights of maritime communication that have long been protected by international law because they enhance global economic development and promote international political stability.

Additionally, law is law or not at all. In other words, an East Asian regional exception to the rule of international law could undermine the applicability of the rule of law in all cases, related to law of the sea in all places.

This could have serious consequences. At stake is whether international law of the sea as a whole is interpreted in such a way as to promote the peaceful military uses of the seas or, by contrast, whether law becomes a means to promote the kind of anti-access, national-security-focused interpretation for coastal states that Beijing is attempting to impose.

The outcome of this larger struggle will determine the extent to which large swaths of the seas including disputed maritime and land territories are securitized by coastal states rather than left open to the stabilizing influence of the naval activities of the international community.

The outcome has long-term implications for the health of the global system on which the economic health and political independence of every state relies.

Increased maritime instability would be the logical and inevitable result of the universal applications of interpretations of international law of the sea that remove the authority of all states to use nonsovereign maritime zones for traditional naval purposes. Let me underscore this. The logical result of the Chinese perspective would be increased maritime instability. This is a particularly problematic approach inasmuch as approximately 38 percent of the world's oceans are covered by EEZ.

Just as the lack of governance on land results in the disruptive spillover effects of failed states, so too at sea would a removal of international authority to provide order result in increased zones of

instability. Like Somalia, some key coastal states with long coastlines and extensive EEZs have little or no capacity to provide maritime stability and order.

Remove international law authorities to provide order in these regions and all order is removed. In addition to freedom of navigation and overflight for the purpose of undertaking maritime security operations, international law of the sea has long protected the right of states to send naval forces abroad for the purpose of gathering information, undertaking exercises, engaging in diplomacy and signaling political concerns.

In this regard, full naval access to the maritime commons has, for instance, enabled peaceful use of naval power to signal the existence of political red-lines or even to demonstrate shifts in power.

Information gathered from outside of a coastal state's sovereign zone can provide a stabilizing influence as major powers seek, such as NATO and the Warsaw Pact states once did, to enhance global security through improved understanding of each other's capabilities and intentions.

To address these challenges to the existing maritime order, in my view, the United States fundamentally needs to reassert its leadership role as an advocate for the importance of the access-oriented bases of international law of the sea. A comprehensive strategic communications plan should be developed and coordinated across agencies of the U.S. government in my view.

Additionally, since UNCLOS is the basis of most modern international law of the sea, either as a matter of treaty responsibility of parties or as a matter of customary law for non-parties, it is my view that the U.S. should accede to UNCLOS in order to more effectively exercise this leadership from within its ranks and not just from outside them.

Thank you.

[The statement follows:]

VICE CHAIRMAN WORTZEL: Thank you very much.

Mr. Giarra.

MR. PAUL S. GIARRA
PRESIDENT, GLOBAL STRATEGIES & TRANSFORMATION
HERNDON, VIRGINIA

MR. GIARRA: Good morning, Vice Chairman Wortzel, Cochair Videnieks, Commissioners and colleagues.

I'd like to express my appreciation for the opportunity to appear before you with my distinguished colleagues with whom I agree. I

plan to discuss one particular implication for the United States of China's naval modernization that has particularly far-reaching consequences: China's landmobile, maneuverable reentry vehicle equipped, anti-ship ballistic missile, or for the duration of my remarks, ASBMs.

I want to emphasize that these views expressed here are mine alone, and they have been developed solely from unclassified sources.

Although my views, they have benefited greatly from unclassified consultation with many colleagues, including the gentlemen here today.

I will use my time today to address the question of national and naval implications of a developing Chinese capability that only now is attracting widespread unclassified notice.

Public awareness of Chinese ASBMs is just now gaining steam. This unprecedented anti-access capability has numerous implications for the U.S. Navy that can probably be best summarized as losing air dominance and perhaps air control over the high seas.

I would like to draw your attention to this cover from the May issue of the U.S. Naval Institute's *Proceedings* magazine. You may have this available to you, but if not I can make it available to you. It's a painting by maritime artist Tom Freeman that depicts a Nimitz class aircraft carrier and its escort in flames, having been attacked by a Chinese ASBM strike.

Fundamentally, these ASBMs, and China's asymmetric strategy for control of the sea from the shore, have profound consequences for the U.S. Navy and for American global strategy, as my colleague on the panel, Rear Admiral McDevitt has mentioned.

For the U.S., future security depends upon unimpeded naval power. Dealing with a complex, fractious and increasingly insecure world--nation states as well as non-state actors--will require being able to exploit maritime external lines of communication.

China wants to thwart this American global strategic mobility and power projection. China's strategic intent is to put at severe risk the eyes, ears, and, in this case, the fists of American naval power projection systems built for short-range persistent operations in the Asian littoral and China's maritime approaches.

Chinese ASBMs are a "keep out" capability designed to range and attack naval surface platforms, the centerpiece of American naval power and a key element of U.S. global deterrence and crisis response strategy.

Consider that there are only about two dozen capital ships in the U.S. Navy: 11 or 12 heavy aircraft carriers operating in carrier strike groups; and 12 aviation capable "straight deck" amphibious assault ships operating in expeditionary strike groups.

Even adding to these numbers the other high-value units of the U.S. and potential coalition fleets, there are relatively few capital ship targets. This is going to become a numbers game very soon.

China's development of ASBMs makes moving to and remaining in these littoral seas problematic. In other words, getting there is going to be half the fun.

Chinese ASBMs represent a remarkably asymmetric Chinese attempt to control the sea from the shore. This is a reinforcing Chinese cultural characteristic, given the Chinese predilection for land forces that needs to be carefully considered.

I want to point out at the outset that this Chinese ASBM capability is not yet in hand, but all indications suggest that it is coming soon. Unclassified estimates are that it will be tested at sea within a year or so.

DoD estimates that China's first ASBM would be a DF-21 variant, a member of the Dongfeng family of missiles with a range of approximately 1,000 nautical miles.

Imagine very long-range artillery with great accuracy that is land mobile, making counter-battery fire virtually impossible. Then imagine that someone had the idea to turn it seaward and make it capable of hitting a ship underway. This is an unprecedented capability that the Chinese are aiming for, and that's what China's ASBM amounts to, extraordinarily long-range coastal artillery.

This Chinese ASBM capability depends upon and represents the real advent of network warfare. These missiles have to be aimed at the general area of a network-detected naval target where the ASBM's internal guidance systems can take over.

Like the Soviets before them, the Chinese are now trying to solve this difficult reconnaissance strike problem--which requires extensive over-the-horizon and on-orbit reconnaissance, surveillance and targeting assets to get the missile into the right part of the ocean before its onboard sensors can take over.

Much depends on whether the Chinese can actually succeed in developing an ASBM. For persistent long-range operations, the U.S. Navy is based primarily on aircraft carriers and their embarked air wings. Without extraordinary efforts to provide for air-to-air refueling, naval aircraft in a typical Navy air wing have an effective tactical radius of less than a thousand nautical miles.

The DF-21, a relatively short-range option for ASBM capability, has a similar range, in excess of 1,500 kilometers, according to DoD's China report.

Chinese ASBMs have dramatic implications for the other services and for joint and combined and multilateral operations. No other American military operations--air, ground or amphibious--are

feasible in a region where the U.S. Navy cannot operate.

Conversely, land attack ballistic missiles ranging American bases and en route facilities like Guam make naval operations throughout the region very problematic.

The numbers, as I mentioned, are going to be in China's favor. In a wartime situation, even if fleet ASBM defenses were otherwise perfect, and every U.S. interceptor hit and destroyed an inbound ASBM, naval missile magazines are very limited and cannot be reloaded at sea.

This reload deficiency is a glaring defect for the U.S. Navy. In every other respect of operational logistics, the Navy replenishes at sea. Not being able to reload shipboard missile magazines at sea severely limits our defense and turns an otherwise high-tech network warfare competition favoring the U.S. into a simple battle of attrition favoring the offense.

I should note that any advances in Chinese network warfare have the defects of their virtues for the Chinese, as dependency upon networks cuts both ways.

Bad news does not improve with age. Once the Chinese develop this capability, it will escalate in sophistication and effectiveness and proliferate widely over time, becoming the gift that keeps on giving and further complicating our global military posture.

This is an opportunity now--yesterday actually--for U.S. Navy technical and analytical introspection regarding the resources, organizations, processes, and continuity that we must have for coming to grips with this and other complex operational and technical challenges.

Thank you.

[The statement follows:]

Prepared statement of Paul S. Giarra.

A Chinese Anti-Ship Ballistic Missile: Implications for the USN

Paul S. Giarra

WHY CHINESE ANTI-SHIP BALLISTIC MISSILES MATTER

China is pursuing the development of very long-range, land-mobile, maneuverable re-entry vehicle-equipped (MARVed)¹ anti-ship ballistic missiles (ASBMs), apparently a variant of the DF-21 medium-range ballistic missile (MRBM).² Like the Chinese development program itself, public awareness of the potential regional “keep out” capability of Chinese ASBMs is gaining steam in the West, as evidenced by the May 2009 issue of *Proceedings*.³

Such an unprecedented anti-access capability—to hit a ship underway with a ballistic missile--has numerous implications for the U.S. Navy, the U.S. military, and American strategic mobility both in the Asia-Pacific and globally.⁴ China’s potential development of an anti-ship ballistic missile would give it an anti-access weapon that could hold U.S. carrier strike groups at bay. Experts believe such a missile would be a DF-21 variant, a member of the Dongfeng family of missiles.⁵ As U.S. Naval War College professors Andrew Ericson and David Yang point out in their May 2009 *Proceedings* article, “On the Verge of a Game-Changer”, China probably does not yet have a ballistic missile capable of destroying the major components of a U.S. aircraft carrier, but Beijing is pursuing this capability, and “(a) Chinese anti-ship ballistic missile could alter the rules in the Pacific and place U.S. Navy carrier strike groups in jeopardy.”⁶

¹ MARVed: Fitted with a Maneuverable Re-entry Vehicle, a self-targeting ballistic warhead that maneuvers in the final phase of flight to hit a target that initially is detected, selected, and tracked by off-board, typically over-the-horizon or on-orbit systems.

² For the most recent authoritative unclassified analysis of this developing Chinese anti-access capability, see Annual Report to Congress: Military Power of the People’s Republic of China, 2009, Office of the Secretary of Defense, Washington, D.C.

³ See Andrew S. Erickson and David D. Yang, “On the Verge of a Game-Changer”; and Paul S. Giarra, “NOW HEAR THIS: Watching the Chinese”, both from *Proceedings*, U.S. Naval Institute, Annapolis, Maryland, Vol. 135/5/1,275 May, 2009. The cover of this May 2009 issue of *Proceedings* depicts a U.S. Navy Nimitz class aircraft carrier and its AEGIS escort in flames after being struck by a Chinese anti-ship ballistic missile.

⁴ A briefing on these implications was presented at the fourth annual U.S. Naval War College China Maritime Studies Institute conference--“Maritime Roles for Chinese Aerospace Power”--in Newport, Rhode Island December 11 and 12, 2008.

⁵ Military Power of the People’s Republic of China, 2008, op. cit.

⁶ Andrew S. Erickson and David D. Yang, op. cit.

Imagine very long-range artillery with great accuracy, that was land-mobile, making counter-battery fire virtually impossible. Then imagine that someone had the idea to turn it seaward and make it capable of hitting a ship under way by adding a “shell” that could actively seek and home in on its target. This is what China’s ASBM amounts to: extraordinarily long-range coastal artillery.

Chinese ASBMs are a “keep out” capability designed to attack naval surface platforms, which are the centerpiece of American naval power and the basis for U.S. deterrence strategy. In any reasonable future scenario, American security depends on unimpeded naval power. Dealing with a complex, fractious, and increasingly insecure world will require that the United States be able to exploit the maritime external lines of communication. China’s development of ASBMs makes moving to and remaining in near-ashore sea areas problematic for us. Just getting there is going to be half the fun.

If left unchecked, Chinese ASBMs will have dramatic implications for the other U.S. Services, as well as for friends and allies. No other American military operations, whether air, ground, or amphibious, are feasible in a region where the Navy cannot operate. China’s strategic intent is to put at severe risk the eyes, ears, and fists of American power projection systems built for short-range, persistent operations in the Asian littoral and China’s maritime approaches. Conversely, ballistic missiles ranging American bases and en route facilities make naval operations very problematic. Not only do the Marines, Air Force, and Army share a vital common vested interest with the Navy and American allies in defeating an ASBM capability, but it is unthinkable that the Navy could defeat a Chinese ASBM threat without profoundly joint and combined approaches.

Thus, the Chinese ASBMs represent a remarkably important asymmetric attempt to control the sea from the shore. The capability is not yet operational, but the Chinese appear to believe they can develop the technologies and integrate the individual systems required. In part, they are exploiting earlier Soviet and American developments.

The Chinese capability will depend upon--and represents the real advent of--network warfare. Their missiles have to be aimed at the general area of a network-detected naval target, where their internal guidance systems can take over. Like the Soviets before them, the Chinese are now trying to solve this difficult reconnaissance-strike problem. But unlike the Soviets, and armed with technology they never had, the Chinese appear to believe that they can make this complex capability work. Commanders and analysts should watch for at-sea testing to gauge Chinese progress and intentions. Just as China already has shot down an old satellite to make the point that they can do it, at-sea testing of an ASBM capability will represent a clear indication of Chinese ant-access intentions as well as capabilities.

Much is riding on whether the Chinese can actually succeed in developing an ASBM. For persistent long-term operations, the U.S. Navy is based primarily on aircraft carriers and their embarked air wings. Without extraordinary efforts to provide for air-to-air refueling, naval aircraft have an effective tactical radius of less than 1,000 nautical miles. The DF-21, a relatively short-range option for ASBM capability, has a similar range, “in excess of 1,500 kilometers” according to the 2009 Defense Department report on China’s military power⁷.

The numbers are going to be in China’s favor. In a wartime situation, even if every U.S. interceptor hit and destroyed an inbound ASBM, naval missile magazines are very limited and cannot be reloaded at sea. This is a glaring deficiency for the U.S. Navy. It severely limits the attributes of mobile and flexible striking power, and turns high-tech, network warfare into a simple battle of attrition favoring the offense. It also reflects a forgotten lesson: that sustaining strategic maritime mobility as exercised by the U.S. Navy depends upon at-sea logistics as part of a fleet train formidable in its own right, that enables replenishment and re-supply on the move.

Bad news does not improve with age. Once the Chinese develop an ASBM capability, it is bound to escalate in sophistication and effectiveness and proliferate widely over time—the gift that keeps on giving—further complicating America’s military posture. But this is an opportunity for U.S. Navy technical and analytical introspection regarding the resources, organizations, processes, and continuity that the United States must have for coming to grips with this and other complex operational and technical challenges.

FAIR WARNING

It is fortuitous that the U.S. Naval War College’s China Maritime Studies Institute translated for publication the Chinese *Shipborne Weapons* journal article “The Effect of Tactical Ballistic Missiles on the Maritime Strategy System of China.”⁸ Given its operational and strategic implications, the article might as well have been titled: “The Effect of China’s Potential Asymmetric Strategy for Land Control of the Sea through Tactical Anti-Ship Ballistic Missiles on the United States Navy’s Maritime Strategy and American Global Mobility.” In what amounts to fair warning to U.S. Navy commanders and strategic planners, the *Shipborne Weapons* article raises a series of important and timely questions for American strategic planners, and introduces a set of challenges that will stretch the capabilities, resources, and imaginations of American analysts.⁹

⁷ Military Power of the People’s Republic of China, p. 29.

⁸ Wang Wei, “The Effect of Tactical Ballistic Missiles on the Maritime Strategy System of China.” *Shipborne Weapons* No. 84 (August 2006): 12-15.

⁹ This analysis was drawn from a briefing on Chinese ASBMs, Paul S. Giarra, “As ‘If’ Becomes ‘When’: Chinese Maritime Over-the-Horizon Targeting (OTH-T) and Mobile,

Not since the 15th century has China's Navy come to sea in a meaningful way. Ultimately it will be up to Beijing to answer the question of whether or not the PLA Navy is "coming out." As often as not, the question posed by American naval officers and maritime strategists has been whether or not the Chinese would mirror American naval capabilities, as reflected by the perennial interest in whether a PLA Navy aircraft carrier was looming on the horizon. Likewise, Chinese submarine developments and shipborne anti-surface unit warfare and anti-air warfare developments have provoked interest in Japan and the West, and in particular a renewed interest in ASW. For the most part, however, the jury has not returned a verdict on the scope, scale, and form of Chinese naval ambitions.

However, the PLA Navy's more or less symmetric "coming out" is not the same as asymmetric Chinese measures designed to keep out the U.S. surface fleet. The prospect of Chinese land-based mobile, MARVed (maneuverable re-entry vehicle) ASBMs able to range U.S. and Allied surface units at extremely long range (thousands of miles) imagine extraordinarily long range, mobile coastal artillery is sufficiently different in kind from conventional maritime anti-access capabilities to merit very serious due diligence in Washington, Canberra, and Tokyo. Such a capability, if successfully developed and fielded, also would be different in degree from previous Chinese anti-access methods, due to the stifling effect such an asymmetric land-based Chinese system could have on American strategic mobility as the U.S. Navy has come to understand and exploit it.

While it is not clear from unclassified sources that the PLA could or would field land mobile, MARVed ASBMs, it is increasingly apparent that the Chinese are considering doing so. The *Shipborne Weapons* article translated by CMSI suggests that there is more than one channel to the sea buoy for China, and alternatives to Western doctrine and practice for Chinese maritime strategy and naval capabilities. The *Shipborne Weapons* article on Chinese ASBMs is not "new news." Chinese writers have been publishing on the subject for some time.¹⁰ Fortunately for the U.S. Navy, CMSI had the perspicacity to

MARVed Anti-Ship Ballistic Missiles (ASBMs) -- Implications for the U.S. Air Force of Potential U.S. Navy Consequences," 9 July 2007. This briefing showcases the translated *Shipborne Weapon* article on Chinese ASBMs.

¹⁰ "Movement Forecast Model and Precision Analysis of Maneuvering Targets at Sea," Second Artillery Engineering Academy, 2005; "Concept of Using Conventional Ballistic Missiles to Attack a Carrier Fleet," *Science and Technology Research*, No. 1., 2003; "Study of Attacking an Aircraft Carrier Using Conventional Ballistic Missiles," Institute of Engineering (Second Artillery Corps), Xian 2002; "Preliminary Analysis on the Survivability of a US Aircraft Carrier," *Guided Missiles*, No. 5, 2000; op. cit., Jason E. Bruzdinski, *Military Operations Research in the People's Republic of China: The Influences of Culture, "Speculative Philosophy" and Quantitative Analysis on Chinese Military Assessments*, June 2007, The MITRE Corporation, McLean, Virginia.

find, select for translation, and publish for broader review this particular article, which does a good job of laying out Chinese views on this potential new capability.

Chinese ASBMs have the potential to be the manifestation of asymmetric warfare in the sense that Andrew Marshall, Director of the Office of Net Assessment in the Office of the Secretary of Defense the Secretary originally meant when he talked about the Revolution in Military Affairs. For very little investment relative to the capacity of the Chinese economy, the Chinese seem to be acquiring an effective answer to forward U.S. deployment against them.¹¹

While Chinese ASBMs might not come under the heading of an “Assassin’s Mace,” given that such a technically demanding system-of-systems capability inherently is so visibly part of a large reconnaissance-strike complex, they are nevertheless an apt example of asymmetric Chinese approaches to sea control and maritime security.

CHINESE COMMENTARY AND AMERICAN CAVEATS

What the Chinese Are Saying about Land Mobile ASBMs: A Lot!

As with other significant defense programs and strategies, the Chinese are saying quite a bit publicly regarding speculation, rationale, and plans for a new anti-ship ballistic missile capability in open source academic, military and media writing. This springs from the literary nature of China, where writing and the keeping of records play a large cultural role—a process now more widespread than ever with the advent of a modern publishing industry. In fact, there is so much information available to military analysts that simply collecting, collating, and translating relevant Chinese writings is a daunting analytical task in itself. Translation is particularly problematic for Western analysts, given the paucity of technical trained Chinese linguists and the lack of satisfactory progress in machine translation capability available to the journeyman analyst.

Media reporting and speculation plays a role in publicizing potential new capabilities such as Chinese ASBMs, and as elsewhere, the wonders of the Internet enable sharing and distribution of relevant information. While the prospect of Chinese ASBMs to challenge the American Navy in the Asia-Pacific may not be exactly new news, the issue is reaching critical analytical mass in the unclassified realm of open source materials and unclassified analysis.

Caveats Regarding Chinese Writings

Lest one become carried away by the prospect of analytical richness, several caveats are in order here, as with all aspects of Chinese military writings. Spoofing and deception

¹¹ Correspondence with the author from a senior American Asia specialist, June 2007.

are part of China's stock in trade. Decades of speculation regarding PLA(N) aircraft carriers is a case in point: what amounts to a cheap way to distract the opposition. Therefore, a healthy dose of skepticism is a good thing when it comes to breathtaking new Chinese military capabilities. Language and cultural misunderstandings are another analytical stumbling block. That American analysts on occasion find themselves translating from the Chinese articles that originated in the United States is a good reminder that it takes some effort to keep the record straight. Furthermore, American analysts generally just scratch the surface of what is available in open source literature. Any effective response will have to do a better job of assessing what is being said across the board in China in order to gauge the significance of articles such as this one on ASBMs.¹²

Strategic Signaling

With these caveats in mind, the potential for genuine strategic signaling by Beijing regarding this new ASBM capability must be taken seriously: no nation that depends upon strategic mobility and maritime power can afford to be wrong about such a capability. In this particular case, in a stroke of competitive strategy, China might be particularly motivated to let us know what is coming, in order to focus American attention just where Beijing wants it, in an area where it might be difficult to surmount budgetary and perhaps political restrictions. Determining the veracity of the *Shipborne Weapons* article on ASBMs, and other Chinese expositions like it, is thus a high priority analytical task.

“The Effect of Tactical Ballistic Missiles on the Maritime Strategy System of China”: What the *Shipborne Weapons* Article Says

The *Shipborne Weapons* article calls for a certain analytical perspective from the outset. This analysis stipulates that comments by the author of the *Shipborne Weapons* article regarding Taiwan-related geopolitics, strategic space, escalation control, etc., apply equally to both theater wide operations against the United States Navy absent considerations of Taiwan--i.e., in the broader context of Sino-American relations.

¹² By the end of World War II, there were established heavily resourced and well-staffed codebreaking and translation production lines to deal with the volume and timeliness of intercepted Japanese and German radio messages. For example, for descriptions of how World War II cryptanalysis production was optimized to leverage scarce linguistic, mathematical, cryptanalysis, and analytical resources in support of voluminous requirements, see *The Emperor's Codes: The Breaking of Japan's Secret Ciphers*, by Michael Smith, and *Double-Edged Secrets – U.S. Naval Intelligence Operations in the Pacific During World War II*, by W.J. Holmes. It is unlikely that the United States will mount anything like that response in support of China analysis anytime soon, given that the U.S. government cannot seem to produce sufficient Arabic linguists for the American Embassy in Baghdad.

Likewise, the *Shipborne Weapons* author's comments apply more generally at the strategic level in the Asia-Pacific in the Sino-American state relationship, again with its own fundamental dynamic separate and distinct from considerations of Taiwan. Furthermore, Chinese doctrinal, political, and operational observations in *Shipborne Weapons* regarding Taiwan extrapolate well to mobile targets at sea, and are treated accordingly.

Therefore, subsequent comments by this author will take the following approach: that in essence Taiwan is a stalking horse for the broader bilateral relationship between Beijing and Washington; that the implications of a potential Chinese ASBM capability apply equally to the broader case; and that in military-operational and geostrategic terms, land attack ballistic missile attributes assigned by the *Shipborne Weapons* writer are shared equally by anti-ship ballistic missiles.

Parsing the Article

The observations contained in the *Shipborne Weapons* article may be summarized as follows:¹³

ASBMs resolve China's operational inferiority at sea.

- Strategic systems can be forced to the rear ("at a shallow depth") by defenses (i.e., B-52s in a tactical role.)
- Compared to aircraft, ballistic missiles can play an "outstanding role" for "third world countries" for "penetration of the enemy's defense space."
- "By means of ballistic missiles, the party in the inferior position with respect to combat aircraft can still deliver firepower against the party in the dominant position."
- "Simply put, the emergence of TBMs enables the weaker side, for only a small price, to offset to a certain extent the expensive air combat system effectiveness from the stronger side."
- [This development] may to some extent help to remedy the inferiority of the quality of traditional naval combat platforms.

ASBMs enable China to penetrate defensive systems.

- "... a strong capability for penetration of the enemy's defense system."

ASBMs provide an asymmetric anti-naval capability that would enable China to control the sea from the shore.

- "Use of Tactical Ballistic Missiles Under the Concept of Relying on Land to Control the Sea"

¹³ Unless otherwise specified, phrases in the section are all direct quotations from the *Shipborne Weapons* translation.

- . . . With regard to naval combat systems, if the TBM maritime strike system is created, then the Chinese military in any future potential conflict at sea will have a relatively asymmetrical means of firepower delivery.
- . . . (At) the strategic level, . . . (if) a TBM sea combat system comes into existence, then during any future high-intensity conflict at sea in the coastal waters of China, this system, among various national means of offensive and defensive firepower delivery, will provide a relatively asymmetrical combat environment.

ASBMs are technically achievable.

- . . . the surface vessel target creates a strong contrast against the background and is clearly much easier to recognize.
- Speed and maneuverability of the naval target is a relatively trivial matter, in relation to ASBM speeds.
- Surface ships are highly integrated (i.e., therefore vulnerable to disruption and mission kill) physical platforms.
- . . . for China, there will be no so-called technological “bottleneck” when it comes to controlled, motor-driven [course correction of] ballistic missiles in outer space.
- . . . (missile) control during the reentry stage and other kinds of guidance technology during the final stage . . . were used for the “Pershing” missiles developed during the Cold War period. Currently, TBMs in the service of (the PLA) also use this kind of technology. Thus, it can be assumed that the technical problems of the missile itself are not insurmountable.

ASBMs increase China’s strategic-military space on her maritime approaches.

- “. . . (at) the strategic level, (ASBMs) increases China’s military and political area of operational space with respect to the eastern maritime flank . . .”
- This . . . creates a greater policy decision space for (China) with respect to Taiwan.
- In addition to the value [of TBMs] as a means of retaliation, [these weapons] will also serve as an “existential threat” to counter the adversary’s deployments at sea.
- . . . the problem of intervention by foreign military forces is one that cannot be neglected. [Therefore] it is necessary to undertake strategic deployments in advance, which will contain the opportunities for this intervention to a minimal level.

ASBMs provide China strategic-political room for maneuver.

- . . . TBMs offer . . . a third choice other than the all out use of force or alternatively reliance on non-military means . . . to undertake the military strategy of “fighting without entering.”
- . . . Still another effect is that the existence of asymmetric means of attack under this kind of high-intensity environment objectively sets up for both sides, from the psychological point of view, an “upper limit” for the scale of potential conflict.

This will enable both parties in the conflict to more easily “return to rationality.” Therefore, [China will] have increased space for maneuver in coping with maritime disputes.

ASBMs enable China to avoid strategic complications of land attacks.

- . . . this means of firepower delivery essentially precludes any kind of “engagement” between the two sides, thus it provides (China) with the ability to take control of the military action as well as the trend and development of its corresponding political effects.
- From (China’s) point of view, there will not be too many problems of either a military or political nature concerning the maneuver and deployment of tactical missiles on its home territory.

ASBMs facilitate for China the establishing of escalation control/dominance.

- Conversely, the available maneuver space for the Taiwan authorities is correspondingly compressed, therefore reducing the risks.
- Ballistic missiles . . . provide the aforementioned “quasi-war” action with a workable control function.
- There is another useful role for the TBM. Over a long period of time, the deployment along the mainland’s coasts of medium and short-range TBMs has already had a significant psychological impact . . .
- Whether to change the number of missiles deployed become(s) a means to exert influence upon the island’s internal political situation.

ASBMs require extensive operational and intelligence preparation of the battlefield.

- . . . the key to ballistic missile strikes against targets at sea lies in the preparation of the maritime battle space. [This will require] the timely precision reconnaissance of the target’s orientation, as well as the problem of transferring this data. This is the prerequisite condition for attack against a moving target.
- Preparation of the sea battlefield will require:
 - marine surveillance satellites, electronic reconnaissance satellites, imaging reconnaissance satellites, communication satellites and other space-based systems; airborne early warning aircraft and unmanned reconnaissance aircraft; airbase systems; shore based over-the-horizon radars; and underwater sonar arrays.

ASBMs rationalize a necessary and appropriate national level Chinese “public investment.”

- “It is worth noting that these systems must be viewed as a ‘public investment’-- part of a comprehensive naval combat operations system.”

INITIAL ANALYTICAL CONCLUSIONS

The *Shipborne Weapons* article suggests several initial conclusions:

- ASBMs are an extremely attractive, self-reinforcing option for China.
- Chinese ASBMs would provide the PLA with a potential significant operational level capability that had strategic implications.
- At least some Chinese analysts think that ASBMs are technically feasible.
- Chinese ASBMs would be part of a Chinese system of systems reconnaissance-strike complex.
- Chinese ASBMs would be potentially destabilizing, to considerable U.S. strategic disadvantage.
- As “*If*” China fields ASBMs becomes “*When*” China fields ASBMs, the military-strategic balance of power will change in the Asia-Pacific.
- More than ever before, the U.S. Navy cannot afford to forego the advantages of Joint approaches to data collection, analysis, planning, and operations.
- Conversely, the U.S. Air Force has a significant strategic stake in this ostensibly maritime issue, because the Asia-Pacific is an aerospace theater as well as a maritime one: when the U.S. Navy catches cold, the U.S. Air Force sneezes.
- This is the time to muster significant analytical resources to verify or disprove the prospect of an effective future Chinese ASBM capability. The United States cannot afford to be wrong about this potentially destabilizing Chinese development.

Historical Examples of Technical Breakthroughs with Operational and Strategic Effects

Other military-technical breakthroughs have had immediate operational effects. One familiar example from Asia-Pacific military history is that of the Imperial Japanese Navy’s shallow-running aerial torpedoes at Pearl Harbor, which enabled Japan’s operational success against Battleship Row when it was presumed (despite the recent British precedent at Taranto against the anchored Italian Fleet) that such an attack on the U.S. Fleet was not possible.

Another relevant and evocative example of technology enabling an immediate operational and strategic effect, and thereby changing everything overnight, might be the Battle of Hampton Roads in March 1862, also known as the Battle of Monitor and Merrimack, in which the debut of the naval ironclad dramatically changed naval warfare even more broadly.

If China can succeed in integrating the elements of a complex over-the-horizon targeting capability, then an anti-ship ballistic missile capability might turn out to be another example of a military-technical breakthrough that had not only operational, but strategic effects.

China is Pushing the Envelope in Other “Challenge Areas” As Well

It is even more daunting to consider other Chinese “Challenge Areas,”¹⁴ in which the PLA seeks breakthroughs in unprecedented areas in a long-term campaign of military challenge, thereby belying--or at least complicating--prospects for Sino-American cooperation in the global maritime commons:

- Space Warfare (as potentially supported by cis-Lunar and Moon based operations¹⁵)
- Space Information Architecture
- Ballistic Missile Defenses and Countermeasures
- Manned Moon Presence
- Advanced strategic ICBMs and MRBMs
- Energy Weapons
- 5th Generation Fighter Aircraft
- Unmanned Combat and Surveillance aircraft
- Advanced diesel-electric and Nuclear Submarines
- Aircraft Carriers
- Large Amphibious Assault Ships
- Large 60 ton Capacity Airlifters
- Airmobile Army Forces

¹⁴ Richard D. Fisher, Jr., *Two Cheers For the 2007 PLA Report*, International Assessment and Strategy Center, http://www.strategycenter.net/research/pubID.162/pub_detail.asp, June 20th, 2007.

¹⁵ Chris Lay, Dr. Robert Angevine, and Renny Babiarz, “Indicators and Evidence of an Emerging U.S.-China Strategic Space Competition, Final Report,” prepared for The Office Of Net Assessment, Office of the Secretary of Defense, The Strategic Assessment Center, Science Applications International Corporation, April 2005.

Why might China “push the envelope” in the maritime and other domains? The explanation of first resort is generally Beijing’s determination to dominate any military confrontation with the United States over Taiwan, as manifested by control of China’s littoral and coastal waters out to the First Island Chain. However, this rationale is complemented by looming considerations of sea lane security and the seaborne flow of oil “for the lamps of China,” which raises the issue more generally of the vulnerability of China’s seaborne commerce, and tacit (and uncomfortable) dependence upon the U.S. Navy for freedom of the seas. China’s perceived dependence and vulnerability, whatever the objective facts, are bound to have real psychological effects on strategic planning.

In this regard Chinese strategic stakes in the maritime domain include:

- Dependence upon Sea Lines of Communication for
 - Access to markets
 - Access to raw materials for China’s growing infrastructure and industries
 - Energy supplies delivered by sea, and
- Increasingly important “string of pearls”¹⁶ political connections with client states in regions as disparate and distant as Africa, Latin America, and the Mideast
- China’s Merchant Marine
- State prestige
 - Including the contextual irony of China’s own growing surface Navy
- Regional power projection forces
- Naval post-conflict strategic exploitation

Sino-American Competition: Anti-Access vs. Strategic Mobility

These broader considerations of China’s stake in the maritime domain point to Chinese motivations deeper than concerns regarding a conflict over Taiwan, and suggest a more fundamental bilateral competition with the United States, which, *inter alia*, pits a Chinese anti-access strategy against the U.S. dependence upon strategic mobility in the Asia-Pacific and globally.

In the context of a military net assessment, a *competition* takes place over time between rival powers striving for military advantage with strategic implications. Construing and

¹⁶ Christopher J. Pehrson, *String of Pearls: Meeting the Challenge of China’s Rising Power Across the Asian Littoral*, Carlisle Paper, Strategic Studies Institute, U.S. Army War College, Carlisle, PA, 25 July 2006.

defining competitions have been used as tools by the Dr. Andrew Marshall, Director of the Office of Net Assessment. The Battle of Britain is an example of one campaign in a strategic aerial bombardment vs. air defense competition between the Allies and the Axis powers during the Second World War. The outcome of a competition depends upon myriad intuitive but less obvious factors in addition to capabilities, systems, platforms, tactics, and operations, such as:

- Doctrine
- Personnel
- Governance
- Command and Control
- Decision Processes
- Organizations
- Industrial Base
- Scientific Base
- Technology
- Strategic Choices & Proclivities
- Defense Economics
- Sustainability

These factors suggest the beginnings of the broadest outline for an analytical schema regarding Chinese capabilities, applicable to each of the above Chinese challenge areas, and to the issue of Chinese ASBMs in particular.¹⁷

Defining the nature of the competition is the first salvo in anticipating, equipping for, deterring and/or fighting the battle envisioned in it, and this includes “winning without fighting”. Competitions can take place without a shot fired, but result in strategic outcomes nevertheless, such as the Soviet-U.S. submarine vs. antisubmarine warfare competition of the Cold War. This latter aspect of competitions resonates with particular poignancy with the PLA.

China’s continuing anti-surface ship developments are part of what amounts to a U.S.-China strategic mobility vs. anti-access “*competition*,” in the very best Net Assessment sense of the word.¹⁸ The United States depends upon strategic mobility across the broad

¹⁷ For a more detailed discussion of an analytical taxonomy relevant to Chinese mobile, MARVed ASBMs, see Paul S. Giarra, “When “IP” Becomes “When”: Thinking About How to Think About Chinese Mobile Maneuverable Re-Entry Anti-Ship Ballistic Missiles and Effective Long Term Competitive Analysis--Initial Questions for Analysis Resource Managers,” Occasional Paper, Hicks & Associates, 24 June 2007.

¹⁸ In the context of a military net assessment, a competition takes place over time between rival nations striving for military advantage with strategic implications. The Battle of Britain

reaches of the Pacific, and throughout the Asia-Pacific littoral, and upon the geostrategic advantages of penetrating access to the Asian heartland. If Beijing intends to challenge what amounts to American maritime dominance, the PLA will have to secure and defend China's maritime approaches, and stymie U.S. strategic advantages of unimpeded access throughout the Asia-Pacific.

Implications for Competitive Strategies

As intended by the Net Assessment practice, defining and embellishing this competition raises all sorts of implications for competitive strategies, both American and Chinese. The point for American planners is to consider the nature and implications of the competition. Since it takes two sides to compete, American planners should consider ways to strengthen aspects of the competition that favor the United States, and alternatives and work-arounds to those factors favoring China.

Internal to the Sino-American anti-access vs. strategic mobility competition, there are available many options for doctrinal, strategic, and operational tactics, techniques, and procedures (TTPs); and those technological, and asymmetric responses the U.S. might consider in order to defeat Chinese capabilities in detail. Once the competition has been parsed, possibilities such as command and control warfare, and ways to deconstruct the necessary integrity of a Chinese OTH system of systems, will begin to make themselves evident. External to the competition, and defined by it, are numerous opportunities for competitive strategies that in concept would prompt desired responses or preclude negative actions by Beijing at the strategic level, viz.: fomented land border crises that preclude maritime aspirations; penetrating bombers that divert assets to air defense, etc.

If these options sound familiar, they should. They come from the Cold War playbook, written specifically to deter, constrain, and defeat the Soviet Union in an earlier era, and remain generally relevant to future peer and near-peer competitions. As during that earlier era, coming to grips with the implications of emergent Chinese anti-access capabilities amounts to an extended, complex analytical and decision support challenge confronting U.S. political leaders, legislators, military commanders, defense officials, diplomats, and intelligence analysts. For this set of actors, the initial cognitive and analytical engagement is always difficult, and sometimes the most difficult step of all in meeting such a challenge.

is an example of one campaign in a strategic aerial bombardment vs. air defense competition, the outcome of which is dependent upon myriad factors such as doctrine, sustainability, industrial and scientific base, technology, defense economics, and strategic choices and proclivities, in addition to tactics and operations. Defining the nature of the competition is one of the first steps in anticipating and equipping for the struggle. Competitions can take place without a shot fired, but result in strategic outcomes nevertheless, such as the Soviet-U.S. submarine vs. antisubmarine warfare competition of the Cold War.

This competition is much more sophisticated and complex than simply considering whatever missile the PLA might develop, just as a complex over-the-horizon targeting capability envisioned here is about more than simply the land mobile, MARVed anti-ship ballistic missile. Both competitions and systems of systems generally amount to more than the sum of their parts. Considering each part in turn is a necessary prerequisite to understanding how to derail the competition by diverting it, or how to defeat the system in detail by disconnecting it. Therefore, thinking about the array of technical, doctrinal, and operational components that embody such a capability and its attendant collection and analysis challenge is the necessary first step in managing effective organizational, resource, analytical, and political responses, at both the strategic and operational levels.

Inter-Service Dependence: The U.S. Air Force Stake in Chinese ASBMs

The complexity of this potential Chinese challenge raises an interesting question for Navy commanders and strategists: the extent to which the U.S. Air Force has a large stake involved, and an operational/strategic flank to protect. Inter-Service dependence, and the lack thereof, is an old subject worth reviewing in the Asia-Pacific context.

Americans remember with thanks that it was Japan that wrote the book during World War II on exposing its own strategic flanks. The woeful lack of coordination between the Imperial Japanese Army and Navy prior to and during WWII, far worse than the American case, was a mortal blow to Tokyo's aspirations in the region, just as the disastrous broader lack of strategic and operational coordination between Japan, Germany, and Italy was a fatal blow to the Axis.

However, American inter-Service planning and operational collaboration prior to Pearl Harbor is another example of disjunction with permanent relevance for the United States, and this disruptive ethic transcended the entire preceding interwar period. This might be a good time to assign several sharp Air Force strategists to N 3/5 to help with the new Maritime Strategy, and at the same time detail several Navy strategic planners to CHECKMATE at Air Force Headquarters.

Range and Risk in Naval Warfare: The Potential Operational Effect of Chinese ASBMs

At the operational level, maritime commanders try to range their adversaries at sea through stealth or weapons range because the offense--firing first from the greatest range--has the advantage. Since modern naval vessels are "highly integrated physical platforms" in Chinese parlance (i.e., therefore vulnerable to disruption and mission kill), naval weapons have a high probability of at least mission kill if they can hit the target. If opponents can be ranged routinely, then the operational effect becomes strategic, hence the importance of aircraft carriers to American strategic maritime dominance.

Naval commanders also recognize that, as at Gettysburg and again on the Western Front in World War I, weapons at sea are far ahead of tactics. Therefore, if at all possible, they must and will maneuver to avoid contact if the correlation of forces is unfavorable. The inherent range advantage of Chinese MARVed ASBMs able to range surface ships at sea--what amounts to coastal artillery of extraordinary range (thousands of miles vs. 29 miles)--will affect the range and risk calculations of surface unit commanders, and could shift the maritime balance for the U.S. strategic commander in the Pacific.

Numbers Count

Numbers count when the range advantage monopoly is broken, especially to a force structure that has so much capability concentrated in so few hulls.

Consider that there are only about two dozen capital ships in the U.S. surface fleet:

- 11 or 12 heavy aircraft carriers operating in carrier strike groups; and
- 12 aviation capable “straight deck” amphibious assault ships operating in expeditionary strike groups

Even adding to these numbers the other high value units of the U.S. and potential coalition fleets--major combatants, command ships, replenishment ships, hospital ships, and transports--there are relatively few capital ship targets.

The capital ships--the big deck carriers--are robust, but they are by no means unsinkable. With so few high value assets, commanders and planners have to consider whether a successful attack against even one of these ships, let alone a loss, would be psychologically devastating at home and operationally debilitating at sea. The potential result of such effects would be a significant decrease in overall U.S. Naval power—real and perceived—in the region.

Given that prudent allies and interested observers, reading the same Chinese publications and perfectly capable of doing the strategic and operational math, are making their own calculations in advance, this is not a casual or theoretical issue for the U.S. Navy. Commanders and planners will want to know more about China’s technical ASBM capabilities in order to develop operational and technical options for defense, since innovative and effective asymmetric countermeasures might reduce the necessary costs and necessary defensive levels of effort of fleet defense per se.

Nevertheless, U.S. Navy and regional and functional combatant commanders would have to give high priority to active fleet defense against Chinese MARVed ASBMs, against which even “minimal” operational and technical options would be difficult and expensive. While too early for definitive comparisons, much less conclusions, consider

the level of effort in the Navy's Cold War response to the Soviet anti-carrier threat, and that period's strategic investment in significant collection, analysis, war planning, decisionmaking, and procurement. Over the course of the competition with the Soviets, for example, the heavy opportunity costs of defensive systems in Navy hulls detracted considerably from battle group strike power.

Caution Will Dictate the Quest for Understanding

In the context of the developing bilateral anti-access vs. strategic mobility competition, and in the event of specific ASBM developments, prudence will dictate great political and operational caution, *on both sides*. It will be incumbent upon U.S. leaders to understand *Chinese* calculations from a *Chinese* perspective, regarding decision-making on the part of the PRC leadership leading to attacks on American Carrier Strike Groups and Expeditionary Strike Groups with ASBMs at extremely long ranges. Among other scenarios, Americans will have to consider Chinese reactions to American naval deployments, as well as surprise attacks when these U.S. naval formations have not yet made any overtly aggressive moves against China.

Can the Chinese Succeed Where the Soviets Failed?

If the Chinese can achieve what the Soviets attempted, and bring to bear long range strike assets in a new way against mobile naval targets, this would be a warfighting breakthrough of strategic and arguably historical consequence. This Chinese capability would put allied navies and the world's merchant shipping at significant risk, thereby upsetting the current strategic military calculus that ships at sea cannot be targeted effectively by long range systems. The stakes are very high.

A Chinese ASBM capability would be the embodiment of what once were the Soviet Navy's aspirations for a reconnaissance-strike complex of sea- and space-borne sensors and regiment-sized attacks by anti-ship bombers armed with long range anti-ship cruise missiles, coordinated with submarine and surface vessel attacks. Is it possible that China could succeed where the Soviets appear to have failed at constructing an over-the-horizon reconnaissance-strike complex?

Cold War historians might consider whether the Soviets actually did fail, or whether their reconnaissance-strike achievements were masked by the inconclusive way the Cold War ended. At the least, perhaps the Soviet Union left as its legacy a reconnaissance-strike complex poison pill. Furthermore, metrics of success differ. It will be up to savvy American China analysts to determine, *from the Chinese perspective*, how Beijing would measure reconnaissance-strike success, given its deterrent and political as well as operational implications.

From an American perspective, the offense at sea (and in this case the PLA is striving to turn the tables and gain the operational offensive) has an inherent advantage. For the U.S. Navy, technical breakthroughs that would make MARVed ASBMs a viable option for China would be particularly dramatic for three reasons:

1. First, the reconnaissance-strike complex as a whole is not cheap, but it is much less expensive than defensive systems.
2. Second, for that reason large numbers of penetrating systems can be fielded that are able to overwhelm defenses in coordinated attacks.
3. Third, in a naval context, interceptor missile at-sea magazine capacity on board targets and escorts is severely limited, and defensive load-outs would be exhausted rapidly in a saturation-attack scenario, given current U.S. Navy force structures and ship designs. This third point plays out time after time in various analytical venues.

Obviously, ABM interceptors will not be the only countermeasure fielded against a Chinese ASBM threat. The U.S. Navy learned during the Cold War not to concentrate on the arrow if the archer could be targeted. This is one area in which inter-Service cooperation could be a point of leverage, since offensive counter-air (i.e., penetrating stealthy missile, UCAV, and aircraft counter-ASBM attacks against launchers, bases, and C4ISR facilities) is a possible capability that the Air Force can bring to bear to support and reinforce naval access to the region. Since China's Integrated ISR system may be especially vulnerable, this is an obvious potential topic for Joint, RCC, and Combined Allied planning.

Clearly, difficult technical and system integration hurdles would have to be overcome before China could field a viable MARVed ASBM force. However, in addition to American technologies that the Chinese freely admit to having compromised (including the Pershing missile and its MARVed warhead), there is a long history of relevant Soviet ASBM and reconnaissance-strike developments, not all of which were fielded, available to guide and support Chinese development efforts.

For instance, the Soviets developed a version of an anti-ship ballistic missile system in the late 1960s. The SS-NX-13 was an SS-N-6-sized weapon that was to be fired from Yankee SSBN launchers. As it developed, it had some form of maneuvering RV with a radar seeker for terminal guidance. It was not clear at the time whether or not it was to be nuclear armed. The range, as far as could be determined by the test series, looked to be somewhere near 500km or about 300 nm. This was one of a series of weapons that was to be the terminal end of the broader naval reconnaissance-strike complex being developed at the time.

Other system-of-systems elements were the AS-19 ASM carried by the Backfire bomber; SS-N-19-equipped surface ships; and the SS-N-3/19 in submarines. The RORSAT and EORSAT systems with the Bear D reconnaissance aircraft provided the detection front end to find carriers and provide data-linked locating directly to weapons platforms.¹⁹

Obviously, these Soviet achievements represent significant experience and technology that might well have found its way to China during the extensive military exchanges that have occurred between Russia and China. Many scientists, researchers, and technicians also have been provided to China over that period, at least in a role supporting some of the weapons and space systems that have been the subject of sales and exchanges.^{20 21}

IMPLICATIONS

Implications for the U.S. Navy

Chinese over-the-horizon targeting (OTHT) reconnaissance-strike success where the Soviets failed would stimulate a strong technical and operational response from the U.S. Navy. The extent of that response can be imagined by recalling the extent of Cold War anti-Soviet measures taken by the Navy, with significant emergent implications for the U.S. Navy's force structure, doctrine, and strategies.

For the U.S. Navy, successful Chinese OTHT capability would raise the prospect of Chinese anti-surface unit warfare being waged at extreme ranges from homeland-based, distributed, and on-orbit platforms that would be component parts of a PLA over-the-horizon reconnaissance-strike complex. American force structures and platforms optimized for the offense at the expense of defensive capabilities and assuming relatively insignificant maritime opposition unexpectedly would find themselves in harm's way, and their power projection capabilities effectively held beyond operational range. Without an effective counter, the surface fleet would be held at (very) long ranges. This means, among other things, that operational and strategic power projection calculations based on tactical ranges of U.S. Navy tactical aircraft would be thrown into a cocked hat. Short-range aircraft in the Navy's current and future air wings, and even offensive land attack cruise missiles would not be relevant to peer competitions.

¹⁹ Author's correspondence with a veteran American naval intelligence analyst and strategic planner who was involved in these issues during the Cold War, 2007.

²⁰ Op cit.

²¹ This raises the additional issue of proliferation, further complicating naval planning. As the number of ballistic missile-armed nations multiplies, so will the ability to engage mobile maritime targets. If MARVed ASBMs can be developed, then, as goes the proliferation of ballistic missiles, generally so will proliferate this new anti-ship capability.

Likewise, Marine Corps assumptions of near-shore over-the-horizon ship-to-objective maneuver would not appear to be realistic in the face of an effective Chinese ASBM capability, since the platforms whence the Marines would stage would be held out of the peer and proliferated peer client conflict.

The limiting factor of U.S. Navy shipboard ABM interceptor magazine capacity would be one factor in prompting development of shipborne and off board DEW defenses against ASBMs. The U.S. fleet, on the defensive, would be at the strategic disadvantage vis-à-vis China, marking a drastic shift in the correlation of forces for the United States in the Asia-Pacific for the first time since 1942.

Would the U.S. Navy Change its Force Structure in Response to Chinese Mobile MARVed ASBMs?

Senior observers have opined that the Navy would not or could not change its force structure. Considerations of significant force structure changes necessarily come hard to a Service built around platforms with a 50 year service life. When external factors intrude on POMs and shipbuilding plans, might the Navy change course? There are a number of historical examples from the last century that illustrate possible alternatives to doing nothing:

- Embark on a Pearl Harbor-style housecleaning, pressing the advantage of new capabilities after a decapitating attack.
- CNO Arleigh Burke's approach:
 - Invest about 10% of the budget "on spec" in transformational capabilities, and have them ready when they are needed.
 - This amounts to what Admiral William Moffett achieved when he, John Towers, and others established American Naval aviation, based around platforms and a cadre of mission-oriented personnel who were committed to a fledgling professional community, and prepared by extensive experimentation to rise to new occasions.
 - Their contributions enabled the Navy to carry the fight to the enemy after Pearl Harbor despite the demise of the battleship "gun club."
- The Hyman Rickover approach to capability development:
 - Single-minded, inside the system (more or less!), painful to watch but eminently successful, and directed with brilliance during his tenure.
 - Other salient examples include Cold War ASW; Combat Air Patrol Fleet Air Defense; the Submarine-Launched Ballistic Missile; and the Aegis weapons system.
- The Manhattan Project:

- Top down
- Externally imposed
- Massive “off-budget” resources
- Accelerated development
- The country’s best minds
- Ruthless means to an end
- A surprise to the Services
- Disruptive strategic consequences of historic significance

National Strategic Considerations

Apart from the potentially drastic consequences an effective Chinese ASBM capability would have for the United States at the military operational and military strategic level, American political leaders would have to consider national level geostrategic effects, varying in degree based on the success of professed Chinese aims.

Diminished escalation control: If one may apply the First Law of Thermodynamics to preliminary Chinese calculations of increased escalation control through ASBMs, then in such a competition the total control over available escalation remains constant, and in a zero sum game, the United States would lose some ability to dominate escalation. This is especially true in a future proliferated world of more than the current four nuclear players in the Asia-Pacific (the United States, China, Russia, and North Korea), and in particular in scenarios in which American and Chinese nuclear stockpiles reach effective parity through some combination of mutual reduction and/or escalation.

Diminished political dominance: In the global political system as presently configured, American political dominance has been enabled by military dominance, as reflected in its virtually unchallenged strategic mobility. This dominance manifests itself through a strategic doctrine of forward deployment that emerged at the end of the Second World War and was defended and pressed home against the Soviet Union during the Cold War. This dominance has enabled allies and alliances to commit to mutual goals and strategies with the United States. Chinese ASBMs would intend to challenge the idea of that political and military dominance by physically threatening its basis in fact.

Limited effects-based options: In the military vernacular, effects-based options are those alternatives made available to political leaders through the effects of military action. Effective Chinese ASBM capabilities and strategies would preclude many military effects heretofore available to American commanders in support of desired political goals.

Are Clean Sheet Deterrence Theories and Strategies Necessary?

It is too early to determine whether the advent of a viable Chinese ASBM capability would require new theories of deterrence and force different American geopolitical strategies. However, such a prospect does raise the more general notion of a new peer competitor in the Asia-Pacific with significant anti-access and power projection capabilities. Getting ahead of this strategic level problem, given the long lead times for new systems and organizational responses, is precisely why strategically oriented intelligence collection, reconnaissance, surveillance, reconnaissance, information processing, and analysis of China is so important today.

The prospect of Chinese land mobile ASBMs requires a new start in reviewing strategic assumptions and force structure plans. If it achieved nothing more than to provoke thoughtful consideration of what the prospect of a peer competitor in the Asia-Pacific might mean, then the CMSI publication of the *Shipborne Weapons* article has provided a signal service.

Unintended Consequences, Multi-player Scenarios, and Cascading Drivers:

China already casts a large shadow in the Asia-Pacific. Ironical in light of this discussion of military hard power potential, it is China's soft power "Charm Offensive" that currently is making significant inroads into American spheres of influence.²² The prospect of a near-peer military competitor as exemplified by China's "Challenge Areas," in combination with this charm offensive and China's growing economic clout, is shaping up to force a reconsideration throughout the region of loyalties and commitments vis-à-vis the United States. The consequences over time of choices by regional actors may lead to unintended and unforeseen consequences, new regional security drivers, new multi-player alignments, unprecedented escalation scenarios, and cascading geostrategic and operational effects. This has the potential for very different outcomes, and places a very high premium on careful surveillance, data and intelligence collection, extensive war gaming, and thoughtful technical and political analysis.

WHAT NEXT?

Analytically, this will require the United States to connect the dots, by getting *the right* warfighters talking to intelligence analysts and strategic planners in order to assess collection requirements, judge analysis, and recommend actions based on conclusions produced. This will necessitate all source information gathering, including from allies and from China's rich trove of open source material, as well as an across the board analysis of Chinese capabilities: from education to the factory floor, and to the barracks

²² See De Castro, Renato Cruz, "China, the Philippines, and U.S. Influence in Asia," American Enterprise Institute On-Line, *Asian Outlook*. July 6, 2007, http://www.aei.org/publications/pubID.26450/pub_detail.asp

and waterfront. There will be force structure implications, with potentially significant implications for Navy force structure, including, inter alia, far less reliance upon surface vessels. However, bad news does not improve with age, and ignoring the problem will only exacerbate it.

Effective competitive strategies will require detailed and actionable knowledge, first and foremost so as to be able to chart strategic, technical, and operational responses. Commanders and planners also must prepare to tell the strategic story: to the political leadership who must articulate potential responses to the nation; and to the Congress who will be asked to pay the bills. These functions will also require extensive information and analysis.

WHY NOW?

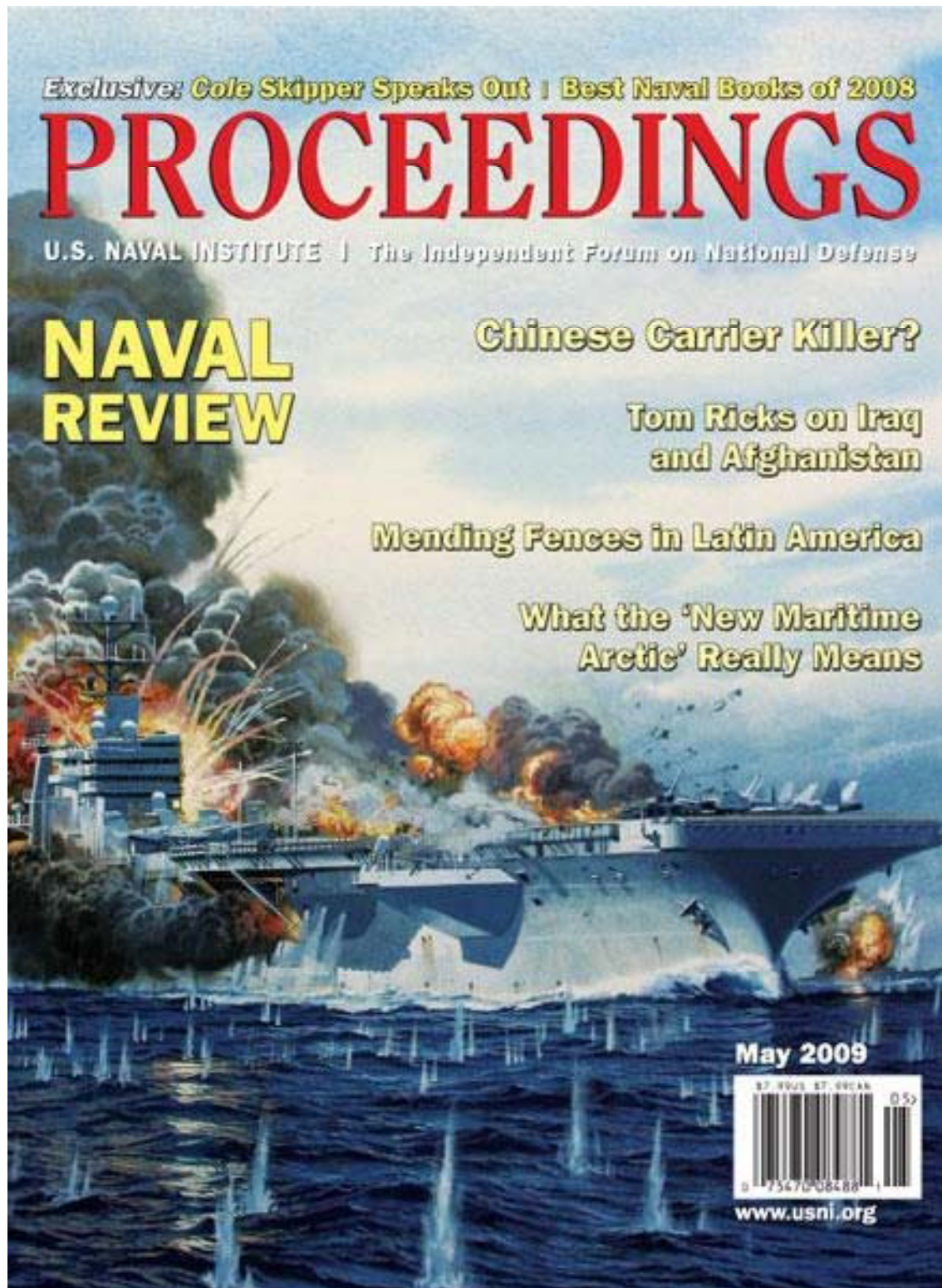
Not since the early days of the Cold War has the United States faced such an analogous requirement for strategic surveillance, reconnaissance, and analysis. This appears to be a period with China similar in many ways to that which President Eisenhower faced with the Soviets, when he recognized that insufficient surveillance, reconnaissance, and intelligence challenged his ability to respond effectively to the USSR's strategic challenge.

In that earlier case, soon after taking office President Eisenhower was confronted by the strategic challenge of not being able to see into the Soviet Union. With the pending advent of intercontinental ballistic missiles and the development of Soviet long range bombers that could reach the United States, the President knew that the inability to determine Soviet strategic developments would either put the United States at risk of strategic surprise, or force him to overreact, with potential strategic, economic, political, and constitutional ramifications.

President Eisenhower responded by commissioning airborne and on-orbit strategic reconnaissance systems that are taken for granted today, but which were unprecedented--and largely undreamed of--at the time. The profound and underappreciated steps he took to organize, integrate, and deploy technical, financial, political, and bureaucratic resources for what became an iconic strategic success offer many lessons, and perhaps templates, for responding to potential challenges China is preparing for us.

Not since the early days of the Cold War has there been such an analogous requirement for penetrating intelligence collection and analysis, and effective military-technical responses. The emergence of a Chinese OTHT system of systems anti-access capability described above, and the fielding of ASBMs, has many implications for analysis organization, processes, and resources. This is the time for a fundamental review of strategic reconnaissance, surveillance, and analysis approaches, procedures, organization,

and resources. Delaying consequential analysis that otherwise could lead to effective action would only transform an operational and strategic challenge into a moral one.



Credit: Tom W. Freeman

Panel II: Discussion, Questions and Answers

VICE CHAIRMAN WORTZEL: Gentlemen, thank you very much.

Commissioner Wessel has the first question.

COMMISSIONER WESSEL: Thank you, gentlemen.

I appreciate this, and I hate to say after hearing the panel, I have more concerns rather than fewer.

Admiral, you talked about, as the other witnesses then elaborated on, the denying-access versus ensuring-access question. I think you were here for the last part of Congressman Forbes' discussion for the questions about what our budgets going forward are as they relate to our naval assets, where we will be going in the future, and certainly as we face the economic problems this country now has and the need to address deficits in the future, our budgets are going to be under increasing pressure, and the discussion of the ASBM, et cetera.

What are the deficiencies? How should we be approaching this over the next couple of years? What kind of assets should we be looking at? Or are we going to be dealing with additional and increasing threats to our forces that we may not be able to respond to as we might like in the coming years? This is for each of the witnesses, please.

RADM McDEVITT: We ought to have Secretary Gates here.

COMMISSIONER WESSEL: We'd like to have him here as well.

RADM McDEVITT: The official position of the Department of Defense as enunciated by the Secretary is that we have, the United States has ample--he's used the "ample" word several times--ample U.S. Air Force and U.S. Naval Forces to be able to deal with the problem of China and China's anti-access capability in the near-to-medium term.

What he hasn't done is define how long the "medium-term" is. Is it eight years, 15 years, two years? And so the answer to your question is in the real near-term, in the next, let's say, four to five years, I think he's correct: we do have ample capability. There's lots of U.S. Navy that's not in the Pacific Fleet that could be made available to the Pacific Fleet to make sure that our capabilities continue to stay ahead of where China is.

The deficiencies are clear. We need to regain the expertise we had in anti-submarine warfare. Probably the apogee of our capability was toward the end of the Cold War when we were really quite good at locating and tracking Soviet submarines.

In the succeeding 20 years, that skill set has largely atrophied. All of the talented people who were there who had grown up chasing submarines have long since left the Navy, both officer and enlisted.

The leadership of the naval service today were junior officers during much of that time so, although some of them did ASW, they did it strictly as far as their own ship or airplane or submarine.

So the ASW skill set--and the Navy has been working on this--but that skill set has atrophied, and we really do need to take that very, very seriously and get better at it because this problem is tougher. At least the Soviets when we were chasing them had relatively noisy submarines so we could take advantage of listening for them and detecting them.

China's use of conventionally-powered, known as diesel, submarines means that those are very quiet when they're operating on battery, and many of the systems that we developed in the Cold War are not particularly effective against a very quiet submarine. So we have to be thinking about new ways to do that. So that's deficiency number one.

Deficiency number two is the potential game changer that Paul Giarra talked about, the anti-ship ballistic missile. Now, Paul talked a lot about making sure we had enough missiles to shoot down their missiles. I personally think that's a loser's game. The way you defeat their missiles is you collapse their surveillance system. If they can't find you, they can't shoot you.

The focus of our attempts to deal with the anti-ship ballistic missile needs to be focused on bringing down or making their surveillance system not work very well so that they cannot use that to target and then launch these missiles with any hope that they'll be accurate.

COMMISSIONER WESSEL: And by that, you mean, would your priority be space-based approaches to blind them?

RADM McDEVITT: Well, I think it's a combination. It may be we would have to be willing to at least consider the fact that we'd have to mess with their satellites and the potential, in turn, of our vulnerability because of our dependence on space-based systems.

But I think there are other ways. There are decoys. We can confuse what they're looking at. There are jamming techniques to jam either the seeker as the missile or confound their over-the-horizon radars. There are other, and largely most of these are very classified, and I'm quite frankly not privy to the inside baseball what's going on particularly in those areas now, but the truth of it is I think if we put our intellectual capital and associated resources against it, that the combination of things that--space-based, jamming, decoys, clever maneuvering, emission control--what used to be called "radio silence," et cetera, et cetera--all of these can make it very difficult for them to find us.

COMMISSIONER WESSEL: Other witnesses, any comments?

MR. GIARRA: Thank you.

Admiral McDevitt does a great job of laying out, with which I completely agree, the complexity of this problem. And I certainly agree that having to shoot down the missiles themselves is the last chance, and it shouldn't be the only chance we take, but I suggest that the complexity of this problem is instructive in that I would suggest a thought experiment.

Consider how the U.S. Navy and really the nation organized during the Cold War to confront the Soviet submarine threat, and remember back, to the level of effort that doing so required, the breadth of expertise, the depth of knowledge and analysis and intelligence collection, and so on, and that's before we ever got to weapon one.

It was deciding what kind of weapons we needed, the kind of fleet we needed to take on the Soviets to protect ourselves and then to defeat them, and I would suggest that we need to think very carefully now about how to organize our institutional and analytic capabilities, the level of funding and the kinds of organizations that doing so will require to be effective, because as I think all of us have pointed out, this is a full-court press on the part of the Chinese. There are tremendous stakes involved, and it's just going to get worse.

Bad news does not improve with age so we might as well figure out really what the news is here.

I give full credit to the intelligence agencies and the policy organizations and the strategic planning that's going on, but things are going to have to change, both in terms of those organizations themselves, but also in terms of the kinds of capabilities that are required.

In the end game, for instance, directed- energy weapons will probably play a very key role because that tends, among other things, to answer the question of magazine capacity.

Doctrinally, this is not a kind of situation in which the Navy and the other services can charge forward. This is, in fact, perhaps a situation that's going to require much more of a rollback approach to Chinese military capabilities if we get in a fight with the Chinese.

And, strategically, I think, this needs to be put in very clear perspective with regard to Chinese efforts and policies and strategies and capabilities across the board because it's part of a much wider and colorful tapestry of Chinese actions. This is going to require really organizing for success, in my view.

COMMISSIONER WESSEL: Thank you.

MR. DUTTON: If I may take a moment to comment. I actually have two comments on additional and increasing threats that we may not be able to deal with.

The first, it's hard for me--I don't study force structure questions in detail--but one of the things that I think we need to be careful to maintain an edge on is innovative thinking. It's interesting that in the past we've dismissed a lot of times the Chinese as imitating existing technology, and it's true, in many cases, the Chinese are just simply replicating existing technology and using it.

But there's increasing evidence, in my view, that that Chinese are beginning to develop some innovative thinking, not just doctrinally, but in terms of what the future of warfare might look like.

I'll point out as one example some pictures that have circulated recently of an underwater aircraft carrier. Now, this may be fanciful, let alone innovative, but even so, to think about the possibilities of the future in ways that are innovative has been an edge that we have always possessed. It's part of the American culture and part of the American military culture, and I think it's important that we see it as a value that we must protect and invest in.

Second, it sort of leads towards the idea of soft power, and it's the idea of legitimacy, something else that I think we need to protect and invest in. The reason I mentioned in my conclusion that we ought, as a government, to have a strategic communication plan that works across our agencies that helps to articulate the universal benefits of the existing UNCLOS framework and of how a global maritime partnership exists to protect the global system and that fundamentally it juxtaposes against the Chinese argument, frankly, I think quite well.

China has developed a fairly unified vision of its future. I've testified before this committee about the three new warfares--the public opinion, legal, and psychological warfares--and how they integrate into China's doctrinal and force structure decision-making, and they're doing a very good job of that.

So we have to be on guard that there are not increasing threats to our perception of our legitimacy in how we undertake our activities in the EEZ, and I will say that quietly and on the sidelines of various conversations I've had over the last couple of years in Southeast Asia, in particular, military, academic and government leaders sometimes question some of the U.S. activities, and we need to make it clear that they are essential, legitimate and important, universally important. So those are the two I'd offer for you, sir.

COMMISSIONER WESSEL: Thank you.

VICE CHAIRMAN WORTZEL: Thank you very much.

Commissioner Mulloy.

COMMISSIONER MULLOY: Thank you, Mr. Chairman. I want to thank all three of the witnesses for their very helpful testimony. Mr. Dutton, thank you for your testimony, too, on the economic zone.

I want to address my first question to Admiral McDevitt.

Admiral, you give some very helpful testimony, and you say I'm going to answer the five questions that you asked in the invitation letter, and question one, what are the strategic implications of PLA naval modernization on U.S. national security?

But before you do that, you make a point of saying before I do that, I want to give you the context of what is happening here, and it's the context--what you're saying is this doesn't come up in a vacuum. China is a growing economic and wealthy nation which then permits it to grow its military strength.

Okay. This Commission was formed to help integrate the economic, financial, trade, and the political-military, and get some sense of what is happening here. When we issued our first report in 2002, the Chinese Embassy had a press conference attacking our report because we were making some connections of what is happening economically and what's going to happen militarily.

So the question for me always is who drives American national policy? And I felt that our national policy on China has been driven too much by the economic-financial-trade interests. We get a lot of cheap goods; that's great for Americans. But the national security community has been absent in pointing out the implications of these economic policies.

I wonder do you have that same sense, and do you think that there has to be greater attention paid to the national security impact of these economic policies that we're following? I'm not against economic integration, but I think the imbalance in this relationship is very, very unhealthy.

RADM McDEVITT: I think the basis of U.S. policy at least for the last 20 years, perhaps 25 years, toward China has been to have them be integrated into the international community as a force for stability and as a positive force globally.

25 years ago, not too many people were wringing their hands about the PLA. It was still very much a People's War army, defense oriented, very defense oriented, and not talking about projecting power very far, and while it blustered against Taiwan, it really didn't have the ability to reach out and touch Taiwan in any serious sort of way.

So naturally, the focus of our policy was more toward diplomacy and economic issues during much of the '90s, and the military piece of that was engaging with China and military-to-military engagement.

Over time, as China's economic development has permitted it, in its headwork, as Peter suggested, it's thinking carefully about how it needed to modernize, it's done a good job--it's developed a plan. It thought about it. It executed, and now we're seeing the reality of their plan in terms of modernizing their military, and suddenly as they get better and better and better, the national security piece is increasingly

reaching a more prominent point.

But the reality is you know better than I how much U.S. debt China holds, so I think it would be foolish for me to suggest that national security should assume pride of place vis-a-vis our overall policy toward China, where we have significant and very important economic and other political issues with China that we want China's help on. North Korea being one.

As their military capability grows, the key for the interagency process and the government and the shaping of policy is going to be striking the right balance. I think toward the end of the Bush administration or during the Bush years, when people were talking about hedging and engaging as the two/twin aspects of our China policy, hedge against a bad outcome, but by the same time engage and hope for a good outcome, is still going to be the way we're going to characterize that.

COMMISSIONER MULLOY: Do either of the others want to comment on that?

MR. GIARRA: Sir, there are interesting historical precedents regarding the emergence of a power in the face of other great powers. Britain had some good experience and some bad experience in that regard. The first was with the United States, and that worked out pretty well. The economic relationship obviously was a big part of that relationship.

It didn't work out so well with the Germans, and I don't think history necessarily repeats, but it does rhyme. So if nothing else, that comparison is instructive. That's the first thing I would say.

The second thing I'd say by way of helping you think about this, is that the Institute for National Strategic Studies at National Defense University is bringing out in just a few weeks *Global Strategic Assessment*, which consists of 20 chapters on a variety of subjects. I think you'll find it very interesting, but more to the point, the first chapter is on economic security.

And the chapter has pride of place for a reason, because these issues are so important now and have distinct security ramifications for the United States. One of the things that the chapter tries to do is tie security to economics in ways that have not been done in the past. So once it's through the security review, I'll be happy to make sure that you get a copy right away.

It will be available online before the hard copy is printed.

COMMISSIONER MULLOY: Thank you. Thank you both for your comments.

VICE CHAIRMAN WORTZEL: Commissioner Videnieks.

HEARING COCHAIR VIDENIEKS: Good morning, gentlemen.

Admiral, you mentioned in your testimony the question of

balance as it relates to stability. And regarding that balance, our power and the power of our allies, military power, what would it take and how long would it take for Japan to step into the picture meaningfully?

The second question, to everybody, is what are our national security interests in Western Pacific?

RADM McDEVITT: Certainly Japan--Paul spent many, many, many years working the Japan desk in OSD, so he will probably have something to add to this. But at the end of the Cold War, not only were we really good at tracking Soviet submarines, the Japanese were really, really good at doing that. In fact, in many ways better than we were.

Remember, they had a lot of the Russians there in the Sea of Japan coming down from Vladivostok so they spent a lot of time, and they were quite good. They too have had some of those skills atrophy.

But the Maritime Self-Defense Force is an incredibly professional navy, and hopefully Japan is increasingly--not hopefully. That's a bad way to put it. The reality of China's submarine growth has caught Japan's attention.

I was kidding with a visiting PLA delegation a couple of years ago when they came through to talk with us, and I said did you know that every time that you launch a submarine, there's a bell that goes off in Tokyo? And he looked at me, and then we talked a little bit later, and after, on a break, he asked, do they really have a bell? And I'm not making that up, but the point is, the point is Japan having lived through World War II and the problems with U.S. submarines interdicting them, this is not an abstract problem for Japan. They have real-life experience, and knowing what it's like as an island nation, totally dependent upon sea lanes, to be threatened by a substantial and potentially hostile submarine force.

So, as this realization takes hold within Japan, I expect them to be focused more on the same sorts of capabilities that we would like to have, and so I consider that as potentially additive to our capabilities in the region.

So what are our national interests in the region?

HEARING COCHAIR VIDENIEKS: National security interests.

RADM McDEVITT: National Security interests.

HEARING COCHAIR VIDENIEKS: In the Western Pacific.

RADM McDEVITT: Western Pacific. I think maintaining, maintaining stability in the region, in a sense, making sure our friends and allies are not either attacked or coerced into doing something they don't want to do.

HEARING COCHAIR VIDENIEKS: But China is an autocratic communist country. Maintaining stability in China?

RADM McDEVITT: I'm not sure I--

HEARING COCHAIR VIDENIEKS: Well, maintaining stability in the region, which includes the PRC would be maintaining stability in PRC.

RADM McDEVITT: Yes. Well, I don't know that our interests involve--I think ultimately the assumption is we would like very much to see China politically evolve to non-authoritarian, some sort of democracy with Chinese characteristics, I guess, is the way they would put it.

Eventually, I suspect that will probably happen. It will probably be happening because it will be led by the Party because the Party makes sure there is no other political entity that can do that, but certainly that's in our national interests because if you believe in the democratic, democratic theory that most democracies do not go to war with each other, as China evolves and becomes more democratic or more pluralistic in that way, the chance of a military conflict with China presumably goes down and, hence, that would be certainly a very important national security interest.

HEARING COCHAIR VIDENIEKS: Thank you.

Other panelists, comments?

MR. DUTTON: I actually have two comments. One is about your first question. In terms of Japan, there are three factors to keep in mind about Japan's ability to fill the gap in the short term. I actually think the answer to your question is, yes, they do have the capacity, and if we are willing to work closely with them to develop that capacity, that they would also be willing to work closely with us, but remember they are subject to some of the same trends we are.

They have an aging population and a workforce-to-retiree ratio problem that is becoming increasingly difficult to sustain.

Second, they have a deep financial recession in their country as well. That obviously puts additional financial pressures on them.

And third, they have less, in my view--this is my personal view in observing Japan's political process, they have a less unified sense of willingness to increase their military capacity even in the kind of defensive sense that we're talking about here.

They are less unified politically so all of these factors I think are challenging the relationship between the United States and Japan and our ability to rely on Japan to fill some of the gaps although I believe fundamentally they can do it.

Concerning our national security interests in the Western Pacific, I'll just really quickly kind of express that obviously we have an interest in moving our potential threat zones as far away from our coastline as possible and operating on exterior lines.

And, therefore, the security of our allies that assist us in doing

that supports our own national security. That gives us, I think, a direct interest in the security of our allies.

Additionally I want to point out that a fundamental national security interest of the United States is the health of the global system on which our economic strength depends, which requires freedom of navigation for commercial purposes and freedom of navigation for military purposes to support the health of the global system.

So I believe freedoms of navigation are a core national security interest of the United States in East Asia.

HEARING COCHAIR VIDENIEKS: Thank you, sir.

MR. GIARRA: Commissioner, the Japanese have stepped in meaningfully a long time ago, starting really during the Korean War. As Admiral McDevitt has described, Japanese military capabilities are actually better than they're advertised to be, although Japan takes a particular view regarding its own self-defense.

It's sort of like watching a game that you don't quite understand sometimes, like if you were at a cricket match, you'd really need somebody to interpret, and the Japanese have a real propensity of avoiding direct military involvement despite the growth of their self-defense forces.

Having said that, one of the success stories in the alliance I think over the last 20 years has been the bilateral cooperation on ballistic missile defense, and obviously this has been a very big issue for the Japanese. Remember that the Japanese are in a ham and eggs breakfast. The Japanese are the pig that's really committed to this exercise because they're there on the front lines. They're sort of in many ways, concerning the emergence of China, like Germany was during the Cold War, and it's an uncomfortable position for them, very uncomfortable.

But particularly with naval cooperation, I think there is quite a bit more that can be done, but this is going to have to be for all the right reasons. This is going to have to be approached very carefully with the Japanese, and the Japanese are going to have to be on the throttle of this despite the fact that they're going to have to be urged to do more, because the political balance that the Japanese have established regarding defense is delicate and important.

This requires very, very careful deliberation on our part and with the Japanese, and the Japanese will answer these questions as we go forward, but it requires real care.

HEARING COCHAIR VIDENIEKS: Thank you.

VICE CHAIRMAN WORTZEL: Thanks a lot.

Commissioner Fiedler.

COMMISSIONER FIEDLER: I think it was you, Mr. Giarra, who said that the United States' goal should be, if it wasn't, that we enjoy

unimpeded naval power. Do we have that today in the Pacific vis-a-vis China?

MR. GIARRA: No, we don't, and I don't think we've ever enjoyed unimpeded naval power obviously. But--and this is the issue, of course--if we want to exercise national power and we want to do it at sea, as I believe we should and have to, then the question becomes what does it take to make that happen? And part of it is non-military. Part of it is being on good terms with our neighbors, friends and even competitors.

Part of it, however, becomes then eventually a military estimation of the state of the competition between various countries. China obviously the issue here. And in that calculation, thinking of the emergence of China, what are reasonable Chinese actions and what are unreasonable actions, and I think one of the things that concerns us in this discussion is, well, what of this is reasonable and what isn't reasonable regarding Chinese developments?

That's why the taking the step back and looking at the mosaic of Chinese actions is helpful because it helps to determine, well, is this reasonable or not? After all, powers emerge. We're a perfect example of that. It can be done without upsetting the tea cart. Sometimes it doesn't happen that way and that's part of the calculation.

Can we ever be completely powerful at sea? No, even during the time of British mastery of the maritime commons, that wasn't always the case, but we certainly need to be capable enough, and what's interesting in my view about anti-ship ballistic missiles is it cuts the ability to move forward.

COMMISSIONER FIEDLER: I understand. So in 1996, I believe, President Clinton sent aircraft carriers into the Taiwan Straits in response to the Chinese missile tests off the shores of Taiwan. And we've heard testimony over the last few years that a President of the United States would have to think twice about doing that again, that the risks are dramatically different today than they were in 1996.

So I read from that simply that our power is vastly impeded at the moment, vis-a-vis Taiwan, our response, for instance, in any conflict involving Taiwan, which is the most immediate threat. Am I mistaken?

RADM McDEVITT: I would parse it slightly differently. We're at peace right now. The possibility of conflict with Taiwan is increasingly remote. Our Navy operates where and when it pleases within international waters throughout Asia with no inhibitions, no worries that somehow that they will be prevented from doing that.

And so if we were to have another replay of the two carriers--by the way, neither one of those carriers was in the Taiwan Straits. The USS Independence was in the Philippine Sea, I believe, and the

Eisenhower was on the way. One of the advantages of naval power, as long as you don't have CNN with a camera saying here's where they are, is nobody knows for sure exactly where they are.

I would say that if we were to do another show of force off Taiwan I don't know if you're aware of that or not, but routinely we have major exercises in the Western Pacific and we have two or three carriers there. At least we do that once a year, which is essentially a show of force. They happen to coincide at the time that the PLA is doing their big exercise so that they can't necessarily think they could roll right into an invasion of Taiwan.

So my sense is that were it another show of force, certainly our forces would be more circumspect because we'd have to start accounting for more PLA submarines in the, but would the threat be such that we would shy away? I doubt it.

COMMISSIONER FIEDLER: Anybody disagree?

MR. DUTTON: I'd like to comment just briefly on this question. I would not assess the current status as being as dire as that particular phrasing might suggest.

Today, there is no ASBM threat that we're aware of. Second, their submarine and mine force capabilities are probably their most developed anti-access capabilities. The mine force capabilities are probably not problematic in this particular sense, and the submarine force certainly is potent, frankly, in my view, but it's something that I think there are various ways to deal with, certainly detection tracking and at least contesting, if not directly defeating, everyone of them.

Second, I'd like to point out, if memory serves me correctly, in 1996, we positioned carriers to the east of Taiwan, and the reason this is important is that unlike the Taiwan Strait where the waters are very shallow, the waters are very deep east of Taiwan. We have a significant advantage in some ways because of that. It does eliminate some of China's strengths in anti-access capabilities.

Think twice about sending them? I think, of course, there's always risk, but there are down sides to escalation for China as well. And so a careful calculation, of course, would have to be made, but I think at least at this stage, the game has not yet changed, in my opinion.

RADM McDEVITT: If I may, just one last thought. People tend to forget that the reason you have an aircraft carrier is to carry airplanes. Airplanes fly a long way. The ship doesn't have to be close to the area of interest. It's the airplane that counts, not the ship.

COMMISSIONER FIEDLER: I understand. Thank you very much.

VICE CHAIRMAN WORTZEL: Thank you very much.

MR. GIARRA: Commissioner--

VICE CHAIRMAN WORTZEL: Please go ahead.

MR. GIARRA: If you don't mind. Commissioner Fiedler, I think the game is on. I don't think the game is not underway yet. I disagree with my esteemed colleague. After all, the Chinese have expressed quite clearly that their whole point here is to deny us unimpeded access, and so now the question is what are the terms of the game? What are the rules of this cricket match that we're watching? So this is, it's pretty obvious that this is going on.

The second thing I would point out is in a commander's calculations--and this is important--a naval commander, the Chinese talk about ships as integrated physical platforms, and they understand that you can wing it and put it out of action. So that's the first point.

The second point, technical point, if you'll bear with me, is that the weapons are way ahead of the defenses. And so that if a ship is struck by a modern naval weapon, whether it's a missile or a torpedo or a bomb, and so on, that ship is going to be in serious trouble. Don't take my word for it. Take Tom Freeman's word for it.

These ships are tough and they can come back from tremendous damage. When the U.S.S. Enterprise burned furiously for hours off of Hawaii back in 1969, she was back on line in less than two months, but they're not indestructible. So this is a consideration, and this is why, if you will, the ASBM is almost literally a line in the sand because in order to exercise and operate those weapons platforms that the Admiral has described, you have to come close enough so that those weapon platforms, namely, the aircraft, in this particular case, are close enough to have a tactical and operational effect.

If they can be held back by the threat of these kinds of weapon systems, which is new, which is unprecedented--nobody has tried to hit a moving naval target with a ballistic missile--then that amounts to something.

In addition, of course, there are the torpedoes and the cruise missiles and those different dimensions of the threat, not to mention cyber threats and so on. So the game is on, I think. The line in the sand has been drawn, and the game is changing.

COMMISSIONER FIEDLER: Thank you.

VICE CHAIRMAN WORTZEL: Thank you very much.

Commissioner Slane.

COMMISSIONER SLANE: Thank you.

I have a question for Mr. Giarra first. Thank you for taking the time to come here.

In March, we held hearings on U.S. high tech companies moving to China. One of the industries was optoelectronics which produces the chips for the missile guidance systems. The testimony was that the entire industry except for a few chip plants has moved to China.

One of the major inducements was free R&D by the Chinese. Can you comment on the impact of this industry moving to China in the development of their ASBM systems?

MR. GIARRA: I'm not sure I'm going to have much to add on that. You have to remember, Commissioner, I majored in history.

COMMISSIONER SLANE: I barely got through high school physics.

MR. GIARRA: But during the Cold War, we were able to protect ourselves, and we had control regimes that prevented, largely at least, the overt, certainly the overt flow of technology to the Soviet Union. This is one of the aspects that has changed dramatically.

The Chinese have turned this on its head because of the economics of the situation and the opening of their markets and their penetration, and I mean that not pejoratively, of our markets. So there are economic relationships that didn't exist.

But the transfer of these kinds of technologies is a fact of life that has not been dealt with yet, and technology is flowing to China. On the other hand, the Chinese are developing systems and capabilities that cannot be explained away by espionage or the transfer of technology or the purchase of it. They're developing their own as well.

So this is part of the picture of China that's emerging. China is a savvy and canny and resourceful competitor. I use the "competitor" term advisedly here. And technology transfer is an issue that's larger than this particular hearing, but it certainly bears upon it.

COMMISSIONER SLANE: Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Cleveland.

COMMISSIONER CLEVELAND: We've understandably focused this morning on modernization of strategy, policy planning and military capabilities, but I tend to think that the quality of your personnel, your recruiting, your retention, your promotion policies have a huge influence on the qualitative edge that any force is able to maintain.

I'm wondering if any of you, particularly the historian and Admiral McDevitt, whether you can talk about the personnel reforms that the Chinese have put in place? How are they going about improving who they recruit, who they promote? Your story about do they have a bell is sort of insightful in terms of the quality of their leadership. So do any of you have any views on personnel reforms?

RADM McDEVITT: I do, yes. The reason I can comment is mainly due to the good work that our China team at the Center for Naval Analyses has been doing over the last decade and much of what they have done is taken a look at the personnel side of the PLA.

The leadership of the PLA recognizes that to achieve their vision

of an informationalized environment--in other words, a high tech military that's able to operate modern and sophisticated weapon systems, they need to have a professional military that is more carefully balanced toward professionalism while not losing sight of Party loyalty and fealty.

So, whereas, years ago--Larry can talk to this, too--it was better to be "red" than proficient, it's now, it's important to be proficient, as well, to get ahead. And they've done lots of things like introduce a professional noncommissioned officer corps. Where before it was strictly enlisted conscripts, now they have a way for enlisted men and women to stay long term and make a career of the PLA.

They've introduced something that looked very similar to our ROTC program where they're trying to recruit officers from universities, and they pay them scholarships in return for service, active duty service, in the PLA.

They increased the rigor of their operational training where people are assessed, and the training activities are less scripted and more free-flowing, and then are being evaluated. So they've adopted what any sensible logical military that wants to improve their professional capability, they've taken all those steps, and they're working toward that.

And for those of us who have been watching them over the years, the headwork that they've used to think through what their shortcomings were and what they need to put in place to address those shortcomings has been quite impressive.

Obviously, the proof is still in the pudding because this is still a military where you have a political commissariat and Party committees at every level of operational organizations. So you still have to--your promotion is, to many degrees, is still determined by your political reliability factor as much as your professionalism.

So whether they will be able to totally square that circle and achieve their stated objective remains to be seen, but they've put in place the systems to try to make that happen.

MR. GIARRA: If I had to pick an opponent, the kind of opponent that I would pick would be very, very good at parades and there are those militaries that are like that. They look terrific on the parade ground marching past the reviewing stand.

The two kinds of opponents that I wouldn't pick were the ones who are really crazy and can't be predicted and the ones who are really, really smart, and I think that the Chinese are tending toward the latter. I don't believe they are tending toward the former. In that regard, I want to make a statement. I want to praise the efforts of the Admiral's China team. Someday people are going to be writing books about their contribution to this body of knowledge.

What they are tracking is the rationalization of the Chinese military, in essence. That's the short answer. This has a very interesting implication, and that's because eventually it separates from the Party. I don't mean that that's happening in China, but eventually it becomes important in its own right.

So those who look to the demise of the Communist Party in China are going to be sorely disappointed because Chinese national interests will remain what they are, and American national interests will remain what they are, and this rationalization will still be in place, and the Chinese are just getting much, much better militarily.

So the separation of the Party and the military will not have the beneficial effect that some, I think, hope for.

MR. DUTTON: May I add a couple comments to that? First, I'd also like to recommend to you the work of Admiral McDevitt's group. It's really good work.

RADM McDEVITT: It's actually no longer my group--we have spun them off. They work for Dave Finkelstein.

MR. DUTTON: So there you go. They're doing very good work and I commend it to you for some future inquiries.

But I'd also like to add that a colleague I work with at the War College, Professor Nan Li, is also doing very good work in this regard that's a little different, and he's looking at the tension between the professionalization, if you will, of the PLA and the the tension between that and it being a Party Army.

It's true that there are personnel policies that are modernizing and professionalizing. There's education, doctrine, joint training, joint exercises that are all professionalizing the PLA, but there remains, particularly in the sort of command and control architecture and the civil-military relationships, a distinct Party-Army architecture above it all that produces some tensions frankly.

What I would say is that clearly decisions regarding--I'll say clearly--that's my opinion--decisions regarding, major decisions regarding the use of the military are centrally controlled, but it's unclear to my mind, and I think to others, the degree to which civilian control over the handling of, quote, "sudden incidents"--that's the Chinese translation of the Chinese term--is centrally managed and well controlled through the Chinese interagency system.

I have questioned it in writing in the past, and I think even the fact that it's unclear to the outside is problematic because it can lead to miscalculation, for instance, as to what's being intended.

So this is a very important aspect to your question, I think, which is as there is a professionalization of the PLA, we need to be looking at how they command and control and integrate military decisions into overall larger civilian-military relationships to get a

better understanding of the future stability frankly of use of the PLA.

VICE CHAIRMAN WORTZEL: Commissioner Shea.

COMMISSIONER SHEA: Thanks, everyone, for being here.

I have two sets of questions. The first one I will direct to Mr. Giarra about the game changer. How long has it been under development? When did the United States learn about it?

Following up on Commissioner Slane's line of questioning, was it produced, to your knowledge, with purely indigenous technologies? I think a history major might be able to answer that question. When do you think the at-sea test will occur? What has been the reaction of our allies to the potential emergence of this weapon?

In your written testimony, you say that Chinese ASBMs represent a remarkably asymmetric Chinese attempt to control the sea from the shore; this is a reinforcing Chinese cultural characteristic that needs to be carefully considered. I would like you to elaborate on that a little bit more.

MR. GIARRA: My research on this issue has all been unclassified so it's not clear to me when those in the U.S. government with access to classified information regarding this first learned of this.

It's been three or four years, I think, although I prepare to stand corrected, when the Director of Naval Intelligence and the Congressional Research Service and the CNO started including in congressional testimony references to this capability. The press picked that up, but for a fairly long time, up until just about, really just a few months ago, exacerbated ironically by North Korean missile tests, this was sort of lying low.

In fact, the Naval Institute *Proceedings* had this picture apparently for a couple of years and didn't know when to use it and whether they should or not, and then decided to use it in the May issue.

So my research started a few years ago because I understood the strategic implications of this capability should it come to pass. That may not be a satisfying answer to that set of questions.

It's obviously not in hand. This capability is not in hand. I don't have particular information other than knowledgeable unclassified predictions that this will occur. Tests at sea that can be seen by everybody will occur in about a year's time. Frankly, that estimate keeps moving out month by month, and so I haven't heard of any of those kinds of tests. And how else?

COMMISSIONER SHEA: The comment you made in your written testimony about we need to carefully consider the cultural characteristics that surround this, which I didn't quite understand.

MR. GIARRA: Right. First, it's very interesting that the

Chinese, maybe inadvertently, but maybe on purpose, have designed a system that attempts to control the seaward approaches from the shore.

The PLA is dominated by the PLA Army rather than the Navy or the Air Force. It seems to me that there are cultural and doctrinal implications to that that need to be carefully parsed.

I have not done that myself. I am simply suggesting that in order to understand the Chinese themselves, so that we can understand the system, so that, of course, we can take it apart if we need to, I think that's part of the solution. Does that answer it?

COMMISSIONER SHEA: Sure. Thank you.

Can I ask another question? I think I have a minute left. Is that all right, Mr. Chairman?

VICE CHAIRMAN WORTZEL: Go right ahead, Dennis.

COMMISSIONER SHEA: This is for everybody. Is there any thinking within Chinese military and political circles that perhaps there might be risks associated with being too successful in pursuing an access-denial strategy?

I'd imagine that if they conclusively prove that they could keep the U.S. Navy out of the Western Pacific, which would really alarm people on countries like Japan, India, South Korea and Australia, it could lead to an arms race of some sort. Is that really in China's national security interests?

RADM McDEVITT: That's a very good question. My sense is that this whole access-denial thing, first of all, it's not uniquely Chinese. The Soviets had the same concept of operations during the Cold War--the idea is how do you defend yourself against an approaching naval force that wants to attack you?

And so the similar concept, the difference being the ballistic missile problem. During the Soviet era, the ten-foot tall threat was the air-launched cruise missile from a Backfire bomber. And so what China is doing is very logical. It's sensible. In other words, if you were a Chinese strategic planner in Beijing and saying after '95, how do I deal with carriers showing up, saying how do I deal with this problem of aircraft carriers that are liable to come and mess with things that we want to be able to do on our periphery, you have two choices really.

You can build a replay of the Imperial Japanese Navy and go fight another Battle of the Philippine Sea with the U.S. Navy, or you can take a look and see how the Soviets did it, and say why don't I just do something that if they come to interfere in a Taiwan scenario, which I believe they will do, how do we stop them from interfering, and so hence the denial of our ability to intervene is what this is all about.

I don't know that they've thought through this approach, and if

we did, I'm sure they're not about to tell us. Have they addressed the problem of a culminating point in this concept in which they'll scare the hell out of their neighbors? I think their neighbors are already worried about it, and that was the basis of my argument. We can never let people believe that they have the ability to achieve that denial capability; otherwise, our whole strategic construct, whole strategic approach, to Asia goes in the trashcan because we can't be there.

So whether they're coming to grips with this or not, I think their access denial programs have a certain momentum. I think they think they're on a roll. They've got this thing going. It's starting to work. The surveillance pieces are coming together. The missiles are being tested. The submarines are here. It's going to be very hard to turn it off because again it's a sensible, cost-effective; it's a very logical thing for them to do. So it's going to be hard for them to say we don't want to do this.

COMMISSIONER SHEA: Uh-huh.

MR. DUTTON: May I add to that? A couple of quick points on whether they're considering the possibility of being too successful. The dominant response I see in writing and in talking to the Chinese is a sense of pride and nationalism frankly that does add to the momentum, I think, that Admiral McDevitt mentioned.

But I also hear at some very high levels, and you see it in writing, as well, from major think tanks in Beijing, in particular, occasionally, three cautions. The first being the possibility of strategic overextension.

The second being a reminder of the need to focus on economic development first, that what we're building is becoming too expensive and we have really significant structural problems, economic structural and political problems within China, that need to be addressed first. That reminder is made by senior level advisors, I'll say, academic and you know how they kind of bridge the gap there in China.

And then third is the reminder that we're fundamentally a continental power with continental problems; right. And that as you begin to become more maritime, you have to be careful that it doesn't take away from your fundamental focus as a continental power with continental concerns first; right.

So those are the three cautions that I do hear, and they do tend to be pretty sobering, I think, but I do agree with Admiral McDevitt, that there is a certain momentum. It's almost as if China can't help itself. I hate to say that, but it seems to me to be a certain momentum that is generated by this current success, and I will say, in particular, my personal belief is the aircraft carrier program is an example of that.

In my view, it does not serve China's overall strategic interests to develop an aircraft carrier program because it's more likely to drive

a wedge between them and other littoral Asian states with which they have claims, that they're in competition--right--because China now has made it more likely that China can control the sea and airspace around the Spratly's, for instance, and change the balance of the strategic circumstances that have maintained a certain stasis, that will allow a diplomatic resolution ultimately to occur, as China says it wants.

But the game changer in that particular scenario is an aircraft carrier program that's proceeding apace. I don't see it as a danger to us. I see it as perhaps even a strategic opportunity for us. But as a problem within the overall context of China's neighbors, yes.

VICE CHAIRMAN WORTZEL: I'm going to take advantage of being up here and provide a little historical point. I was the Army Attaché in Beijing in 1995 to 1997, '98, and the first time a senior Chinese military officer of the General Staff Department mentioned ballistic missiles attacking carriers was after our two carriers showed up, and he put his arm around my shoulder and said we're going to sink your carriers with ballistic missiles, and we had a long conversation about it.

But I don't know if they were doing research before that, but that's the first time it got thrown in my face was 1996.

Now, I do have a question. A very experienced PLA military intelligence officer used to meet with me and talk to me, and always challenged me that I tended to talk about the threat from China, and that I needed to be very careful in my language and address it as a latent threat or a potential threat. He used the Chinese word for "latent."

And you know it's a strange bilateral relationship--we have a \$185 billion trade deficit with China. They have or are holding maybe a trillion dollars in our debt. Yet there is a competition, and as Admiral McDevitt put it, we're not in a war and we're not even really in a cold war, but I'd like to draw you out, as each of you feel you want to comment, on how do you address this competition and clear threats that are potential threats and maintain a balance of the other real threats the United States faces?

RADM McDEVITT: When you look at where China is going with their military modernization, in fact, when you just think about the commentary on this panel, the Chinese aphorism "seeing the acorn and imaging the oak tree," the acorn has been planted and we now have a sapling there, and I'm not sure how big that sapling is, but it's still not a full-grown oak.

So the issue is on this competition, on the scale, the judgment of where you think they are on going toward the oak tree determines how you respond. Clearly, the Department of Defense believes that the oak tree is not fully-grown, that we do not need to go to General Quarters

and throw extra money at dealing with China.

The Secretary of Defense, who I consider a very rational man, says we have "ample" capability. So, the issue is--and he also says we have to deal with this anti-access problem and the submarine problem, et cetera. So they recognize, or the people who are accountable, recognize that this is an emerging issue. My sense is right now we just have to make sure that the force structure that we have in place in the region continues to evolve and modernize and get better.

That may mean by just taking things we already own and moving them to the Pacific or that may mean buying new stuff or building new stuff. But I don't think we're behind yet. I do think, though, that we need to make sure that we don't pat ourselves on the back and just tread water. We need to keep pace.

MR. GIARRA: By way of answering your questions, I want to thank Commissioner Shea for introducing this notion of momentum because it seems to me that what we're really seeing is unfinished business on the part of a continental power that wants to check a great maritime nation's power to intervene.

And if you think about it, that really extends back, and I hadn't thought about it before now, that really extends back to the time of the Soviets who were trying to do the same thing for somewhat similar, maybe different, reasons.

Regarding overstepping, it seems to me that the Chinese are not immune from doing so, and they have, I would say, based most recently on Peter Dutton's brief, which is economic exclusion zones and the legality of access, and so on, and the interference with USNS Impeccable and its sister ship just a few months ago.

Now, you can respect Secretary Gates, and I certainly do--and I think the Admiral's description of him as a reasonable man is absolutely correct--but disagree with him on the issue of how important this is because the Chinese have built up momentum, and they are involved in, among other things, the utilization and the development of ballistic missiles as a way by which to defend themselves and command the approaches to China, and anti-ship ballistic missiles is simply the latest in a series of those.

And so I think it's incumbent upon us to determine of this what is reasonable, what's to be expected, but certainly to understand that we have fair warning that--because the way these things work, you can tell years, maybe decades, ahead what's going to happen in the future. It's sort of like demographics in a way.

So I think the Chinese have overstepped. I think we have been warned, and I think we have to do something about it.

VICE CHAIRMAN WORTZEL: All right. The last question will go to Commissioner Reinsch. Thank you for your patience, gentlemen.

COMMISSIONER REINSCH: I'm just curious following up your comments in response to Commissioner Cleveland and a couple other things recently said, if you were in charge of the PLA, what would you do differently from what they're doing? What mistakes have they made?

RADM McDEVITT: My judgment is they haven't made any mistakes in terms of strategic concepts. I'm sure there are lots of execution mistakes, but this anti-access is inherently defensive, and it fits within the broader political signal that China is sending to the region that this is going to be a peaceful rise, peaceful development; we're not a threat.

What they're doing is putting in place a defense concept that is inherently defensive. It only has effect if somebody tries to attack them or interfere with what they want to do. I think the political--I'm a historian too, by the way--but the political scientists call this creating a security dilemma for their neighbors.

As China's ability to defend itself gets better, it makes the security situation for Japan and South Korea and other countries in the region worse. And as long as we believe it's in our interests to be able to be the stabilizing force in Asia, we have to make sure that people there believe we can do that, and so although China's concept is inherently defensive, we need to also indicate that I don't care how defensive it is in concept, in practicality we will be good enough to be able to maintain our position.

So I don't think they've made a mistake at all. I think they've played their cards absolutely right in terms of budgetary decisions on what to go for and what not to go for and where to put their money. They've put their money in things that really matter. They're doing it the right way.

COMMISSIONER REINSCH: Do the other two of you agree with that?

MR. DUTTON: First, I do fundamentally agree with what the Admiral has said. But I keep coming back to the aircraft carrier program, frankly. And what I see is that it is entirely possible that while all of the military decisions have been fundamentally correct in order to achieve this, we term it an anti-access regional objective, the one puzzlement that remains is the aircraft carrier program because although it does have some capacity, as I've laid out, to help them to consolidate their ability to control the interior by adding more dimensions to their airpower control, it does not necessarily mean it is an expeditionary capability that they're developing.

It is kind of a strategic game changer, and so I wonder, although many of the military decisions seem to be pretty solid in achieving their objectives quite effectively, I wonder whether there might not be

some flaw in the grand strategy approach?

RADM McDEVITT: Could I--

MR. GIARRA: Go ahead, please, sir.

RADM McDEVITT: I want to elaborate. I think there's two areas that we need to think about when we talk about the PLA. We can think about the anti-access, which is essentially defending the approaches to China and their maritime interests, and I think there are some things that you're going to hear later today about, which is the other piece of this, using the military during peacetime to be out and about to further Chinese interests in the region and around the globe.

They have global economic interests which have turned into global political interests, and so the Chinese are out and about. We've got PLA Navy ships doing anti-piracy work. And so as these interests have grown, you have another subset, what I would call the peacetime uses of the military, not the wartime anti-access, but the peacetime uses of the military to use their navy the way we use ours, the way the British use theirs, the way the French use theirs, to show the flag, to respond to crises, et cetera, et cetera.

That's a different kind of a PLA Navy, and it isn't here yet, but it's coming, and that's where the aircraft carriers are going to play a role, and that's where some of this other stuff is going to happen. So there are two different dynamics going on here.

COMMISSIONER REINSCH: Mr. Giarra, the last word.

MR. GIARRA: Well, that's a dangerous position to put me in-- lunch, you're waiting for lunch. I have to resort to a prop, and that's my glass, half full or half empty. The whole notion of reasonableness and overstretch or not and so on depends on what your perspective is obviously.

I think the Admiral is right. From the Chinese perspective, sure, they seem to be doing everything right. They certainly have parsed our national military strategy and capabilities and understand that if they can keep our power projection systems far enough away, that those level of effort, persistent but short-range systems, except for the Tomahawk land-attack cruise missile, are basically checked.

But I do want to stipulate that there is no moral equivalency here. The Chinese have had choices, and the choices they have taken have been sort of great power politics and in response to American, transcendent American capabilities. They seem to have responded to crises like the Taiwan Straits in '95-96 by saying never again, and then based on that presupposition have moved forward.

This is, obviously, more than theoretical because things like, not just like, but things like anti-ship ballistic missiles represent technical capabilities that change things at the strategic level.

The torpedo is a perfect example of that happening in an earlier

time where the introduction of the modern torpedo, not the mines, at the Battle of Mobile Bay, changed everything because it separated the weight, the size of the ship from its firepower.

Well, in this case, anti-ship ballistic missiles provide the ability of a country that has a modest, even a modest naval capability from keeping a great navy from approaching, and these are choices the Chinese have taken. They didn't have to go down this path.

I think it would be easy to make a case for the reasonableness of American military posture after the Cold War. After all, we didn't go around the world rolling up our enemies, I don't think, with the exception of Iraq.

So I think that they have overstretched. And I think they have made some choices certainly, and I believe that they have been mistakes for us, no matter how reasonable from their perspective. There's a competition underway that has to be very, very carefully looked at, and that's why I suggested earlier in my remarks, and I'll close with, the prescription for building up our collection, analytical and strategic formulation capabilities first so that we can take the most effective response.

VICE CHAIRMAN WORTZEL: Gentlemen, thank you for an excellent panel, for the time you've taken to help us understand the issues.

We're going to break now and we'll be back in after lunch at 12:45 p.m.

[Whereupon, at 11:40 a.m., the hearing recessed, to reconvene at 12:45 p.m.]

A F T E R N O O N S E S S I O N

PANEL III: OPERATIONAL ACTIVITIES OF THE PLA NAVY

VICE CHAIRMAN WORTZEL: Good afternoon, ladies and gentlemen. The second panel today will focus on the operational activities of the People's Liberation Army Navy, which is kind of an awkward term so we'll probably use PLA Navy, and we would like to welcome Mr. Cortez Cooper and Mr. Fred Vellucci to speak about these operational activities.

Mr. Cooper is a Senior International Policy Analyst at the RAND Corporation. He joined RAND in April 2009 and provides assessments of security challenges across political, military, economic, cultural and informational areas for a broad range of government clients.

He's also served in the U.S. Navy Executive Service as a Senior Analyst for the Joint Intelligence Center Pacific of the U.S. Pacific

Command.

He's a retired Army officer who has served repeated tours in the Asia-Pacific and at the Defense Intelligence Agency. In addition to numerous military decorations, the Secretary of Defense awarded Mr. Cooper the Exceptional Civilian Service Award in 2001.

Mr. Fred Vellucci is a China analyst at CNA in Alexandria, Virginia. At CNA, Mr. Vellucci's research has focused on personnel issues in the Chinese People's Liberation Army, the PLA Navy's evolving strategy and global outlook, and Chinese internal security issues.

Mr. Vellucci's current research interests include maritime competition in East Asia and U.S.-China relations.

He holds an M.A. in Asian Studies from the Elliott School of International Affairs at George Washington University, and we won't hold that against you in this forum.

Well, thank you, both, for being here, and Cortez, you can start.

MR. COOPER: Thanks, Larry.

VICE CHAIRMAN WORTZEL: There will be seven minutes of oral testimony, and then I guarantee you that when we get through to the round of questions, and you'll have plenty of time to speak.

**STATEMENT OF MR. CORTEZ A. COOPER
SENIOR INTERNATIONAL POLICY ANALYST
THE RAND CORPORATION, ARLINGTON, VIRGINIA**

MR. COOPER: I will guarantee you that I'll get as close to seven minutes as I possibly can, Larry. Thank you.

Let me begin by expressing my appreciation to the chair and the other distinguished members of the Commission. It's an honor to once again have the opportunity to testify before you today.

My testimony will briefly examine three areas of pressing concern. The first of these is Chinese Communist Party directives and military guidelines for their naval modernization. The second is the expansion of the missions and deployment of China's naval forces, and trends regarding expansion out to roughly 2020. And finally the implications for the U.S. of Chinese modernization and force deployment strategies.

China's leadership recently has openly stated that global stability and prosperity are intertwined with Chinese national development, and the overarching Chinese approach to this is expressed in President Hu Jintao's Scientific Outlook on Development, which encompasses an evaluation of China's internal and external security environments and highlights the centrality of global economic factors.

It also delineates the so-called "Historic Missions of the Armed

Forces for the New Stage of the New Century," which are intended to safeguard China's expanding national interests, which of course are primarily economic and increasingly global.

China's most recent defense white paper further highlights the inextricable link between China's global economic reach and its burgeoning military power. It's also the first white paper, of six so far, that specifies a threat to China of containment by outside powers. To meet the needs of expanding economic interests in this environment, the white paper describes a framework for the armed forces to enhance capabilities, to accomplish what it calls "diversified military tasks."

These diversified missions require the PLA Navy over the next decade to first become a viable strategic arm; to develop maritime strike packages to conduct and sustain "green water" offensive naval combat operations out to the first island chain, which runs from Japan down to the Philippines and Borneo; to provide combatants and support assets capable of limited force projection operations in distant seas, basically beyond that first island chain; and to provide leadership doctrine, tactics and training for naval integration into joint and multinational operations.

Taiwan continues to serve as the fundamental driver for the development of offensive capabilities in the PLA Navy, and this includes vastly improving the capability to hold U.S. naval formations at risk in the Western Pacific, and to delay or deny their entry into a Taiwan theater of operations. Such operations are already feasible out to approximately 400 miles from China's coastline, and this reach could extend to nearly 1,000 miles if current trends continue, particularly with the development of an anti-ship ballistic missile and improved long-range submarine patrols.

The forces and capabilities focused on the Taiwan scenario can also conduct many of the missions required for enforcing territorial claims in the South and East China Seas, and the PLA Navy has expanded capacity for combat operations in these waters.

Along with this, an important debate among Chinese security strategists concerns the protection of the trade and energy resources that flow through the Straits of Malacca and the South China Sea. China has very limited ability to respond to large-scale threats to Chinese shipping in these waters, and Chinese perceptions of the future security of sea lines of communication such as the Straits of Malacca will play a significant part in decisions regarding resource allocations for power projection capabilities and missions in the future.

Recent events in the South China Sea are probably not indicative of a desire for confrontation with the United States in these waters,

but the Chinese will be increasingly willing and able to present obstacles to U.S. operations within waters bounded by China's claimed exclusive economic zone. Beijing may hope that increasing the frequency and profile of patrols and deployments in these waters will establish de facto control and an upper hand in negotiations concerning the status of claimed islands and resources.

The 2008 defense white paper also stresses the importance of response to nontraditional threats which include providing military support to a range of operations other than war. The current deployment of three PLA naval vessels to conduct merchant escort operations in the Gulf of Aden as part of a multinational anti-piracy effort is a ground-breaking mission for the PLA Navy and one that likely serves as a precursor for other such missions.

To support the diverse set of missions I've mentioned, several key program decisions will be made in the next few years, probably next two to three years, to determine the direction of the naval force for roughly the next 25 years.

The PLA Navy Commander, Admiral Wu Shengli, recently indicated that priority new-generation weapons for the PLA Navy include large-surface combat ships, probably aircraft carriers; super-cruising combat aircraft; stealthy long-endurance submarines; precision long-range missiles; deep-diving intelligent torpedoes; and electronic combat equipment.

These capabilities are in reach in the coming decade for the PLA Navy and are specifically designed to allow the PLA to move over this period from sea denial to sea control capabilities in a regional conflict.

In addition to a focus on programs to develop specific capabilities, the PLA Navy has increasingly focused on naval diplomacy and exercises with regional partners and major maritime powers. Many of these activities are focused on reassuring neighbors of benign intent in the maritime realm, but they also provide an operationally inexperienced navy with a much-needed foreign expertise.

China's political and economic relations with Sri Lanka, Myanmar, Bangladesh and Pakistan also include port facility construction activities that will potentially support future PLA Navy deployments into the Indian Ocean.

Along these lines, Chinese strategists are debating whether or not expanding Chinese economic interests will require the capability to conduct sea control and air superiority operations along sea lanes in the Philippine Sea, Straits of Malacca, and Indian Ocean.

Given national development priorities, it is unlikely that China will pursue the extremely high cost of transitioning to a carrier navy

for at least the next ten to 15 years; more likely is the development of a hybrid navy that has one or two carrier groups designed to provide force projection for regional contingencies or show a presence in distant sea lanes.

To help assist policymakers in understanding strategic implications of China's naval modernization, U.S. analysts should thoroughly assess at least three broad categories and maritime mission sets, summarizing those I've discussed previously.

The first of these is sea control operations in support of local war in the Taiwan Strait, East China Sea and/or South China Sea.

The second is anti-access operations to delay or deny U.S. air and maritime response to crises in the Asia-Pacific region.

And the third is maritime force projection in distant waters.

Convincing Beijing that maritime security and freedom of navigation operations will continue to protect Chinese shipping may help to channel resources away from large-scale power projection programs, but understanding China's stance regarding territorial and resource claims in the East and South China Seas remains essential for keeping resource allocations in perspective. Programs to militarily enforce these claims may accrue from decisions to forego more global capabilities and could be every bit as harmful to U.S. interests.

Alleviating Chinese concerns regarding energy and resource vulnerabilities includes both global maritime security considerations and diplomatic resolution of regional claims.

As I noted in testimony before this Commission in 2006, many of China's leaders appear to believe that U.S. influence and access in Asia must eventually diminish to accommodate China's reemergence as a great power. I delineated, and still recommend, a policy approach to cooperative security and market mechanisms to alter this thinking.

The primary focus should be on maintaining the physical military presence in Asia that sends a clear message of commitment to the region while addressing Chinese concerns regarding evolving inclusive regional security architectures.

Thank you very much.

[The statement follows:]

Prepared statement of Cortez Cooper

TESTIMONY

The PLA Navy's "New Historic Missions"

Expanding Capabilities for a Re-emergent Maritime Power

CORTEZ A. COOPER

CT-332

June 2009

Testimony presented before the U.S.-China Economic and Security Review Commission on June 11, 2009

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The RAND Corporation

The PLA Navy's "New Historic Missions"
Expanding Capabilities for a Re-emergent Maritime Power²

Before the U.S.-China Economic and Security Review Commission

June 11, 2009

Let me begin by expressing my appreciation to the Chairman and the other distinguished members of the U.S.-China Economic and Security Review Commission. It is an honor to have the opportunity to testify here today.

My testimony will briefly examine three areas of pressing concern:

- People's Republic of China naval modernization strategy, in the context of Chinese Communist Party directives and military guidelines
- Recent expansion of the missions and deployment of China's naval forces, and trends regarding this expansion out to 2020
- Implications of Chinese naval modernization and force deployment strategies

The Commission poses a key question regarding China's re-emergence as a maritime power: do recent People's Liberation Army Navy (PLAN) activities reflect a China that will act as a responsible stakeholder, or a China that will seek to only pursue its own national interests? My testimony hopefully will provide insight into the PLAN as a rapidly modernizing maritime force, whose fleet over the next decade will be structured, equipped and trained for a diversified mission portfolio supporting China's expanding economic interests. Whether or not this will equate beyond 2020 to the construction of a force capable of global sea power projection will largely depend upon the perception of China's leaders regarding the viability of economic lifelines under existing maritime security conditions. In the next three to five years, Chinese Communist Party elites probably will make the decisions determining the direction of naval power projection for the next two to three decades.³

¹ The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of RAND or any of the sponsors of its research. This product is part of the RAND Corporation testimony series. RAND testimonies record testimony presented by RAND associates to federal, state, or local legislative committees; government-appointed commissions and panels; and private review and oversight bodies. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

² This testimony is available for free download at <http://www.rand.org/pubs/testimonies/CT332/>.

³ In this testimony, I differentiate between "power projection" and "force projection." The former refers to an ability to project and sustain major combat operations far from secure, fixed basing; the latter to an ability to deploy force packages away from fixed basing for limited times and more permissive, or low-intensity, operations. The distinction is that of the author alone.

Even if China's leaders assess that energy and market access is basically secure, and deem naval power projection beyond China's peripheral seas unnecessary, the PLA will continue to modernize for a number of diverse tasks—some of which are of great concern to U.S. policy makers. The PLAN is modernizing to support joint warfare in the littoral, conduct sea control operations in near peripheral waters and sea denial operations at extended ranges in regional seas, and deploy and sustain naval formations in support of non-combat or low-intensity operations in distant seas. This latter capability can support mutually desirable stakeholder objectives, such as international law enforcement, peace-keeping and humanitarian relief operations.

Communist Party Guidelines for PRC Naval Modernization and Operations

The PLAN has operated for decades under an “offshore active defense” strategy, but only since former President Jiang Zimin's promulgation of active defense guidelines in 1993 did this have real meaning for naval modernization. Under Jiang's “Military Guidelines for the New Period,” prioritization of capabilities to conduct sea denial operations beyond Taiwan accompanied the need to protect coastal economic centers of gravity and deter or delay U.S. intervention in a Taiwan conflict. As part of the requirement to win a “local war under high-technology conditions,” Jiang's “strategic guidelines of the active defense” also led the PLAN to develop offensive capabilities to conduct limited sea control operations to enforce sovereignty and territorial claims in the East and South China Seas.⁴ This requirement has changed slightly over the intervening years, to fighting and winning a “local war under informatized conditions”—recognizing the criticality in modern warfare of command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) and network electronic warfare.

More recently, China's leadership has openly stated that the PRC is a central player in the world economy, and that global stability and prosperity are intertwined with Chinese national development. The overarching approach to this national development is expressed in President Hu Jintao's “Scientific Outlook on Development,” which encompasses an evaluation of China's internal and external security environment and highlights the centrality of global economic factors. The corresponding military guidance clearly establishes the desire for PLA capabilities beyond those required for defense of the homeland and a potential Taiwan conflict.⁵ These guidelines were formally delineated by Hu in December of 2004, in a speech on the “historical missions of

⁴ For a comprehensive reading of Jiang's guidelines, see Jiang Zemin, *The International Situation and Military Strategic Guidelines*, 13 January 1993 (Republished in August 2006, Three Volumes: *Selected Works of Jiang Zemin*.)

⁵ For an overview of Hu's Scientific Development and associated military missions, see James Mulvenon, “Chairman Hu and the PLA's ‘New Historic Missions,’” *China Leadership Monitor*, no. 27, Winter, 2009.

the armed forces for the new stage in the new century.” These “historic missions” delineate four tasks for the PLA:

- Consolidate the ruling status of the Communist Party
- Help ensure China’s sovereignty, territorial integrity, and domestic security in order to continue national development
- Safeguard China’s expanding national interests
- Help maintain world peace⁶

China’s most recent Defense White Paper, *China’s National Defense in 2008*, further highlights the inextricable link between China’s global economic reach and its burgeoning military power. It is also the first White Paper, of six thus far, that specifies containment by outside powers as a threat to China—and the U.S. is the only nation mentioned by name as exerting a negative influence on Asia-Pacific security. The paper indicates that China is hampered by the economic, military and technical superiority of developed nations, and that China’s national development is tied to global factors and expanding interests that demand increased defense capabilities.⁷

The vulnerability stressed in the White Paper has been echoed in a number of other sources in the form of what Hu Jintao has labeled “the two incompatibilities.” The first “incompatibility” is represented by the gap between the current level of PLA capabilities and the aspiration to win a “local war under informatized conditions.” The second is the lack of military capabilities to defend expanding national interests.⁸ The PLA is explicitly instructed to defend China’s broader interests, which implicitly demands that the PLA conduct threat assessments and capabilities development in the context of economic lifelines and activities. This will be an area of much debate for Party leaders and PLA strategists over the coming months.

In order to correct the deficiencies noted in the “two incompatibilities,” the White Paper describes a framework for the armed forces to enhance capabilities to accomplish “diversified military tasks.”⁹ The PLAN is organizing, equipping and training to meet the requirements of this diversified mission set. Many of the facets of this modernization effort are manifest in improved naval combat capabilities in near-shore and green-water scenarios, but others involve developments in logistical and force projection capabilities that can support naval presence farther afield for a broader range of missions. They do not yet equate to power projection in

⁶ Hartnett, Daniel, *Towards a Globally Focused Chinese Military: The Historic Missions of the Chinese Armed Forces*, Project Asia, The CNA Corporation, Alexandria, VA, June 2008.

⁷ *China’s National Defense in 2008*, Information Office of the State Council of the People’s Republic of China, Beijing, January, 2009.

⁸ Unattributed, “New Year Message: Develop a New Situation in National Defense and Army Modernization, Guided by the 17th Party Congress Spirit,” *Jiefangjun Bao*, 1 January, 2008.

⁹ *China’s National Defense in 2008*.

distant waters, but decisions made and programs undertaken in the coming five years could indicate whether or not China's maritime security beyond 2020 will shift in that direction. The context for these decisions will center on perceived vulnerabilities regarding energy security, territorial and resource claims, and security of sea lines of communication (SLOCs). As the 2008 White Paper indicates, China is inclined to view the U.S. and our alliance structure as potential obstacles to Chinese national development goals in these areas.

Expanding Missions and Deployments for China's Navy

Maritime Missions for the "New Stage of the New Century." While many decisions regarding the structure and capabilities of the PLAN beyond 2020 probably have not been finalized, it is clear that China has decided to build and deploy Asia's most diverse and capable naval force. PLAN commanders seek to realize the capabilities inherent in Party strategic guidelines over the next decade by:

- Becoming a viable strategic arm
- Developing maritime strike packages to conduct and sustain "green water" offensive naval combat operations (out to the "first island chain" running from Japan down to the Philippines and Borneo, and throughout the South China Sea)
- Providing combatants and support assets capable of limited force projection operations in distant seas (beyond peripheral waters)
- Providing leadership, doctrine, tactics, and training for integration into joint and multi-national operations

Taiwan continues to serve as the fundamental driver for development of offensive capabilities in the PLA Navy. The PLAN is already capable of imposing and sustaining a blockade against Taiwan, barring U.S. and allied intervention. Even with third party assistance, damage to Taiwan's naval and air forces, and its economy, would be grave in even a limited blockade scenario. The PLAN, supported by the conventional missile forces in the 2nd Artillery Corps, is also vastly improving the capability to hold U.S. naval formations at risk in the western Pacific, and to delay or deny their rapid and effective entry into a Taiwan theater of operations. Chinese capabilities to conduct sea control operations further from its shores will become a reality if anti-ship ballistic missiles (ASBM) deploy and prove as effective as many analysts fear, and PLAN submarines become increasingly capable of long, extended deployments. Such operations are already feasible out to approximately 400 miles from China's southern and eastern seaboard—this reach could extend to nearly 1,000 miles if current trends continue. Essential C4ISR capabilities such as joint command and control, long-range surveillance and reconnaissance, maritime area air defenses, and a joint targeting architecture probably will be in place between

2015-2020—which will also allow Beijing to focus capabilities on deployments to the “greater periphery,” particularly the Straits of Malacca, the Indian Ocean, and possibly the Persian Gulf.

PLAN forces and capabilities focused on a Taiwan scenario can also conduct many of the missions required for enforcing territorial claims in the South and East China Seas.

In 1992, China's National People's Congress passed legislation unilaterally declaring that China had the right to “adopt all necessary measures to prevent and stop the passage of vessels through its territorial waters,” including disputed areas in the South and East China Seas. Recent events seem to indicate that China may be increasingly willing to enforce this position. The UN Commission on the Limits of the Continental Shelf is attempting to resolve maritime boundary claims, and a Chinese Foreign Ministry spokesman has taken the opportunity to assert China's sovereignty over most of the South China Sea as an extension of its claim to the islands therein. This extended claim to the continental shelf includes jurisdiction over the resources below the seabed.¹⁰ China has formally instructed the UN to deny consideration of a similar claim by Vietnam, and the PLAN has expanded capacity for combat operations in these waters. Both nuclear attack and nuclear ballistic missile submarines are deploying to new basing facilities in Hainan Island. China has established a special garrison in the Paracel Islands that includes a naval infantry detachment, and the airfield at Woody Island accommodates the full range of PLA combat aircraft.

An important debate among Chinese security strategists concerns the protection of the trade and energy resources that flow through the Straits of Malacca and the South China Sea. While current and pending capabilities may allow China to negotiate from a position of strength regarding territorial and resource claims in the South China Sea, China has very limited ability to respond to large-scale threats to Chinese shipping in the Straits of Malacca and distant reaches of the South China Sea. While piracy has been on the wane in these waters, and there is no persistent military threat to Chinese shipping in the Strait, Chinese strategists have noted that the increased importance to China of these sea lanes creates a strategic vulnerability.¹¹ Chinese perceptions of the future security of SLOCs such as the Straits of Malacca will play a significant part in decisions regarding resource allocations for power projection capabilities and missions.

Recent harassment of U.S. Navy surveillance ships by Chinese fishing vessels in the South China Sea and Yellow Sea illustrate what one high-level U.S. official describes as “strategic mistrust” based on inadequate military-to-military relations between the U.S. and China.¹² It is

¹⁰ Unattributed, “China Asserts Sea Border Claims,” BBC Online, May 13, 2009.

¹¹ Zhao Hongtu, “Reconsidering the Malacca Dilemma and China's Energy Security,” in Open Source Center CPP20070724455004, June 20, 2007.

¹² Unattributed, “China Military Buildup Seems U.S.-focused: Mullen,” Reuters Online, May 4, 2009.

possible, however, that while recent events are probably not indicative of a desire for confrontation in these waters, the Chinese will be increasingly willing and able to present obstacles to U.S. operations within waters bounded by China's claimed Exclusive Economic Zone. Beijing may hope that increasing the frequency and profile of patrols and deployments in these waters will establish *de facto* control and an upper hand in negotiations concerning the status of claimed islands and resources. This requires PLAN commanders and personnel with much greater operational confidence and skill than has been the case in the past—which will accrue to a growing percentage of the naval force as the number and variety of non-combat operations and patrols increase.

The 2008 Defense White Paper stresses the importance of response to non-traditional threats, which include providing military support to a range of military operations other than war. The current deployment of three PLAN vessels conducting merchant escort operations in the Gulf of Aden as part of a multi-national anti-piracy effort is a ground-breaking mission for the PLAN, and one that likely serves as a precursor for other such missions. Given the overall increase in PLA participation in UN peace-keeping operations, the PLAN may also begin providing logistical support for these deployments. PLAN commanders and personnel performing these missions will address one of the service's most glaring deficiencies: lack of operational experience. These operations may also open options that help to alleviate a growing Chinese concern regarding the security of Chinese personnel and infrastructure abroad.

Supporting a Diversifying Mission Set: Platforms, Weapons and Bases.¹³ The maritime capabilities that China has developed over the past two decades, primarily focused on operations against Taiwan and U.S. forces responding to a Taiwan contingency, are applicable to broader mission sets and will form a foundation for future programs. There will, however, be a number of significant new capabilities that will mark naval modernization in the next decade; and several key program decisions made in the next few years may determine the direction of the naval force for two to three iterations of China's program and budgeting cycle—roughly corresponding to the next 25 years.

For sea denial and control operations in and just beyond littoral waters, the PLAN's primary assets are a large, sophisticated mine inventory and formidable attack submarine fleet. The submarine fleet remains a priority for allocation of modernization resources—in the 2010-2012 timeframe, China will be operating approximately 50 modern or upgraded submarines. The second pillar of Beijing's strategy is the new destroyer and frigate fleet. The PLAN operates

¹³ Except where specifically noted, information on weapons systems and base facilities are taken from *Jane's Sentinel Security Assessment- China and Northeast Asia*, Jane's Information Group, 3 February, 2009.

Russian SOVREMENNY destroyers with advanced anti-ship cruise missiles (ASCM), and is building eight new classes of indigenous destroyers and frigates. The LUHAI and LUYANG destroyers are designed to ameliorate the PLAN's most glaring maritime force projection shortfall—ship-borne area air defenses—and have the capability to conduct long-range anti-surface warfare missions with supersonic ASCMs. The PLAN's new frigates also incorporate much-improved air defenses and stealth design technology.

China is also producing a large number (probably over 50) of HOUBEI class fast-attack missile platforms with a stealthy, catamaran hull design. The HOUBEI is an excellent example of an asset that supports a range of missions: it is a highly capable littoral warfare platform with missiles that can support combat operations in a Taiwan theater or a South China Sea conflict, as well as anti-access or area denial operations against U.S. or allied forces. The PLAN also has a significant deep-water mining capability to support anti-access and blockade operations, with a wide variety of applications via varied delivery and activation mechanisms.

The PLAN Commander, Admiral Wu Shengli, recently indicated that priority new-generation weapons for the PLAN include “large surface combat ships, super-cruising combat aircraft, stealthy long-endurance submarines, precision long-range missiles... deep-diving, fast and intelligent torpedoes, and electronic combat equipment.”¹⁴ These capabilities are in reach in the coming decade, and are specifically designed to allow the PLAN to move over this period from sea denial to sea control capabilities in a regional conflict.

To improve the deterrent impact of Beijing's nuclear counter-strike strategy, the PLAN is also modernizing the sea-based nuclear force. A new SSBN, the Type 094 class, has entered service. Analysts expect it to be armed with 12 ballistic missiles, which could have a range of as much as 12,000km. This would permit attacks on most continental U.S. targets from protected locations close to China's shore, and new basing facilities will allow deployments from both the northern and southern coasts of China.

A number of sources indicate that China has constructed a major new naval base at Sanya, on the southern coast of Hainan Island.¹⁵ This base reportedly includes facilities capable of large-scale loading of forces, armaments, or supplies, and an underground facility for submarine docking. Basing of the Type 094 class SSBN at Sanya will allow deep-water access for more secure operations. Approximately four other naval bases are under construction or expansion to

¹⁴ Bradley Perrett, “Chinese Navy Requires Supercruising Fighter: *Aviation Week's Defense Technology International*, April 27, 2009.

¹⁵ Richard Fisher, Jr., “Secret Sanya—China's New Nuclear Naval Base Revealed,” *Jane's Intelligence Review*, April 15, 2008.

support fleet modernization requirements. This is at considerable expense, and indicates the importance that China's leaders place on providing a solid logistical foundation for growing mission sets. Each of the PLAN's three fleets will likely have new or improved submarine basing facilities.

Naval Diplomacy, Multi-lateral Exercises and Support for Extended Deployments.

Beginning in the mid-1990s, the PLAN has increasingly focused on naval diplomacy and exercises with regional partners and major maritime powers.¹⁶ In 2005, the PLAN joined Russian Navy counterparts in "Peace Mission 2005," conducting firepower demonstrations for the first time with a major foreign navy. The 2008 White Paper notes that over the past two years, the PLAN has conducted maritime training exercises with 14 countries. Many of these activities are focused on reassuring neighbors of benign intent in the maritime realm, but they also provide an operationally inexperienced navy with much-needed foreign expertise.

As a maritime trading power, Beijing approaches its naval modernization as a component of a larger effort that includes robust civil and military shipbuilding capacity, and access to major port facilities on each of the major regional seas. China's political and economic relations with Sri Lanka, Myanmar, Bangladesh, and Pakistan include port facility construction activities that potentially will support future PLAN deployments. These facilities include new or upgraded ports at Gwadar in Pakistan, Sittwe in Burma, and Chittagong in Bangladesh. Chinese support to Sri Lanka is an example of Beijing's ability to leverage economic aid, arms sales, and diplomatic support in the UN into a strategically advantageous relationship—in this case a relationship with a country traditionally allied with India and recently at odds with the U.S. over human rights issues. In 2008, China replaced Japan as Sri Lanka's largest foreign donor, with aid topping U.S. \$1 billion. Some analysts believe that Chinese arms sales were largely responsible for the Sri Lankan forces' recent defeat of the Tamil rebels, and that these sales are linked to a deal whereby China will assist in the construction of a port at Hambantota in return for future PLAN access.¹⁷

Exercises and Patrols: Increasing PLAN Confidence and Skill for Diverse Missions.

In November of 2007, the PLAN conducted an air and naval exercise in the vicinity of the disputed Paracel Islands, including live-firings of advanced surface and sub-surface launched ASCM. The first of the new Type-094 SSBN submarines also deployed to its new base on Hainan Island at this same time. Both South and East Sea Fleet forces participated, as did one of China's most

¹⁶ Liang Guanglie, "Chinese Military Foreign Diplomacy is in Step With the Times," in Open Source Center CPP 20081223702009, December 23, 2008.

¹⁷ Jeremy Page, "Chinese Billions in Sri Lanka Fund Battle Against Tamil Tigers," *The Times (UK) Online*, May 2, 2009.

effective littoral maritime combat platforms, the new HOUBEI class fast attack missile craft. Recognizing China's improving posture in the contested waters, Vietnam protested the exercise.

Following a lull during which new systems came on line and older subs were decommissioned, the PLAN has increased long-distance submarine patrols—one report estimates a rise from 2 in 2006 to 12 in 2008.¹⁸ At-sea replenishment has also been a focus of training and deployment activity, and the decision to deploy a three-vessel naval group for anti-piracy operations in the Gulf of Aden indicates an increasing comfort on the part of PLAN leaders with long-term deployments. Increased PLAN presence in disputed regions in the East and South China Sea, and in proximity to the operating areas of U.S. and other naval forces, both raises the need for development of maritime de-confliction procedures and provides experience for PLAN operators in more complex operational environments.

Force Projection Aspirations. Chinese strategists are debating whether or not expanding Chinese economic interests will require the capability to conduct sea control and air superiority operations along sea lanes in the Philippine Sea, Straits of Malacca, and Indian Ocean. China's leaders will be making decisions in the near term regarding military and non-military approaches to perceived vulnerabilities in these areas.¹⁹ Given national development priorities, it is unlikely China will pursue the extremely high cost of transition to a carrier navy for at least the next ten to fifteen years. More likely is a "hybrid" navy that has one or two carrier groups designed to provide force projection for regional contingencies or a show of presence in distant sea lanes. Reports indicate that the Russian SU-33 ship-based fighter may be the airframe of choice for an indigenous conventional propulsion carrier in the 45,000-60,000 ton range, and that construction could begin at any time at Shanghai's Changxin Island shipyard.²⁰

An operational carrier will lend prestige to China's Navy, and provide extended airpower in scenarios where China can protect the carrier, such as in a South China Sea crisis. It could, of course, also be used to support humanitarian and disaster relief missions. To focus on forming carrier groups for global power projection, however, would be an enterprise of immense cost, and one that would potentially heighten regional and global fears of Chinese adventurism. For many regional contingencies, the anti-access capabilities that Beijing currently prioritizes offer more return for the investment, and some of these capabilities might be sacrificed if China pursues broader power projection goals centered on carriers. Increasing Chinese access to bases along

¹⁸ "Executive Overview: Fighting Ships," *Jane's Fighting Ships*, Jane's Information Group, 29 April, 2009.

¹⁹ For discussions on the broad range of burgeoning security concerns for China, see Yuejin Liu, ed., *Science of National Security*, Beijing: China University of Political Science and Law Publishing House, 2004.

²⁰ Tetsuo Kotani, "Chinese Aircraft Carriers?- let Them Have Them," *PACNET Newsletter*, no.32, May 4, 2009; and Andrei Chang, "China ready to Build Aircraft Carrier," UPI International Military Might Column, June 2, 2009.

key sea lanes might be viewed as a much lower cost option for purposes of limited force projection and deterrence of attacks to Chinese shipping.

Strategic Implications for the United States

U.S. strategists and analysts should thoroughly assess at least three broad categories of mission sets for which Chinese leaders have directed the PLAN to prepare:

- Sea control operations in support of local war in the Taiwan Strait, East China Sea, and/or South China Sea
- Anti-access operations to delay or deny U.S. air and maritime response to crises in the Asia-Pacific region
- Maritime force projection in distant waters

Each of these categories must be considered separately and in aggregate when determining how best to develop needed counter-measures, and cooperative approaches where appropriate. Analysts should carefully scrutinize official Chinese sources for indications of trends in leadership positions and perceptions in those policy areas that will drive subsequent naval power projection decisions. These areas include:

- Increase or decrease in competitive and mercantilist approaches to energy and trade policy—and the “partnerships” that Beijing develops in this environment
- Chinese elite perceptions regarding global acceptance of China’s growing military dominance in peripheral waters, and the geographic scope of this dominance
- Aggressiveness in pursuit of security forums, both in Asia and beyond, that explicitly or implicitly exclude the U.S.
- Expansion of the PLAN peacetime “foot print”—including base/port access agreements and the signature of routine naval patrols
- Programs supporting the deployment of China’s first aircraft carrier—indications of whether or not China is positioning for transition to a carrier-centric navy

Due to the diverse range of missions confronting the PLAN, resource constraints will figure prominently in maritime strategy decisions. While China’s stated defense budget has enjoyed almost two decades of double-digit annual increases, and actual expenditures exceed the stated figures significantly, China’s expanded security outlook will necessitate hard resource choices. Convincing Beijing that current SLOC security and freedom of navigation operations provide a secure environment for Chinese shipping may help to channel resources away from large-scale power projection programs. Understanding China’s stance regarding territorial and resource claims in the East and South China Seas, however, is essential for keeping resource allocations

in perspective—programs to militarily enforce these claims may accrue from decisions to forego more global capabilities, and could be every bit as harmful to U.S. interests. Security analysts often focus to our own detriment on broader power projection issues, mirror-imaging that potential competitors seek to develop symmetric capabilities with the U.S. Alleviating Chinese concerns regarding energy and resource vulnerabilities includes both global SLOC security considerations, and diplomatic resolution of regional claims.

Countering Anti-Access Strategies. Chinese anti-access strategies and capabilities are formidable. The threats to U.S. freedom of movement and action in Asia include conventional, long-range strike threats to U.S. bases and maritime formations, and counter-C4ISR threats to U.S. forces' "eyes and ears." These threats would be significantly exacerbated in a scenario in which the U.S. is denied full use of regional bases. Washington's options for regional contingency response will diminish if China can successfully convey to regional actors that long-term political, economic, and security costs of full support to the U.S. are too high to bear.

U.S. and Japanese submarine forces should figure prominently in counter-measures for PLA anti-access capabilities on China's eastern or southern periphery. For Taiwan and beyond, the U.S. needs an anti-submarine warfare architecture with distributed sensors, unmanned vehicles, and the full complement of surface, sub-surface, and aerial detection, targeting, and weapons systems. Maintaining a larger number of our own nuclear attack submarines in the Pacific (including SSGN missile boats) would also provide a number of advantages that would complicate the Chinese use-of-force decision calculus. As the PLA develops deep-water mining capabilities, new mine counter-measure systems also will be increasingly important. As China fields a more effective stand-off capability via improved detection, tracking and long-range missile systems, U.S. carrier groups may have to operate further from China's coast to avoid unacceptable risk. Ensuring air superiority over potential trouble spots in the East and South China Seas (particularly the Taiwan Strait) will involve difficult decisions about the extent to which the U.S. is willing to strike key targets on the Chinese mainland.

Reinforcing the Regional Security Structure. PLAN littoral and green water power projection capabilities will certainly weigh ever more heavily on regional actors as they determine security alignment policies and force development priorities. U.S. military-to-military contacts in South and Southeast Asia are a critical component of the regional security architecture—one that must not slip as China grows in influence. The importance of physical presence of naval forces in the Pacific also must not be underestimated, and naval exercises should openly illustrate rapid surge capabilities. Even the perception on the part of Beijing that PLA capabilities could deny U.S.

freedom of action would at best complicate peaceful resolution of issues, and at worst lead to miscalculation and escalation.

As I noted in testimony before this Commission in 2006, China's leaders appear to believe that diminishing U.S. influence and access in Asia must eventually occur to accommodate China's re-emergence as a great power. I delineated, and still recommend, a policy approach to cooperative security and market mechanisms to alter this thinking. The primary focus should be on maintaining the physical military presence in Asia that sends a clear message of commitment to the region, while addressing Chinese desires regarding evolving, inclusive regional security architectures. Washington should ensure overtly recognized U.S. supremacy in key capabilities, but must not rely on this dominance as sufficient to ensure regional stability in the longer term. U.S. leadership in regional security arrangements, along with a cooperative, market-based approach to oil and natural resource access, potentially can channel PRC military capacity toward shared security roles and interests, and away from a decision to build increasingly formidable maritime power projection capabilities.

VICE CHAIRMAN WORTZEL: Thank you.
Mr. Vellucci.

**STATEMENT OF MR. FREDERIC VELLUCCI
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CNA, ALEXANDRIA, VIRGINIA**

MR. VELLUCCI: Commissioners of the U.S.-China Economic and Security Review Commission, I thank you for inviting me to appear before you today.

Before I begin, I would like to point out that the views expressed here are my own and not those of any organization with which I am affiliated.

Today I'm going to talk about several recent developments in PLA Navy training that could be identified through open source research and analysis. As other experts here today will testify, the PLA Navy has been acquiring a great deal of modern hardware to strengthen its capacity, but if the PLA is to transform itself into an effective fighting force, it must also match this hardware with people, much better trained, better educated personnel capable of performing the ever expanding array of missions that the Communist Party leadership is assigning them.

My testimony today will address three crucial factors related to this issue:

First, the PLA Navy's ability to conduct standardized training focused on the requirements of modern naval warfare.

Second, the PLA Navy's ability to attract and train an educated and capable officer corps;

Finally, the Navy's ability to perform an expanded array of nontraditional security missions.

While I've addressed each of these three issues in greater detail in my written testimony, there are three key points I wish to emphasize here.

First, PLA Navy efforts to reform and standardize training appear directly tied to the PLA's perception of modern warfare and new PLA missions.

The PLA's concept of what it means to be a modern force has been continuously evolving. Between the mid-1990s and the present, the end goal of what a modern PLA would look like has evolved from one that was capable of winning first local wars under modern conditions; then it was local wars under modern high-tech conditions; and most recently local wars under informationized conditions.

These frequent reassessments of modern warfare have greatly complicated the PLA Navy's efforts to standardize and improve the

quality of its training because Beijing has continuously revised what it is that the PLA Navy should be training for.

For example, in 2004, just two years after the PLA Navy was issued a brand new standardized body of training guidance, Hu Jintao issued the New Historic Missions. These New Historic Missions tasked the PLA Navy not only to be prepared for the usual missions of deterring Taiwan independence and protecting China's maritime interests, but also to be prepared for safeguarding China's expanding economic interests including sea lane security, energy security, and other nontraditional security issues.

As a result of these new and expanded PLA missions, the PLA again revised the central document governing the way it conducts training, its Outline for Military Training and Evaluation.

This latest training outline became effective on January 1, 2009, and new training objectives include focusing training on specific missions, developing commanders' problem-solving skills, utilizing military training coordination zones, and training for an expanded array of peacetime noncombat operations.

Some of the 2009 training objectives are not new and were also emphasized in the 2002 document. These include the emphasis on so-called "actual combat" training, training against opposing forces, using training as a tool in evaluations, and using training bases and simulators.

The fact that the PLA press continues to report these remaining items as areas requiring standardization and improvement suggests they have still not been satisfactorily integrated into PLA training.

The second key point is that new PLA officer commissioning policies represent a paradigm shift in the PLA's understanding of modern warfare and are indicative of new levels of professionalism.

At the same time, these new policies have also encountered significant problems. As part of the PLA's mid-1990s decision to transform itself from a force based on mass to a leaner, high-tech force, the PLA Navy assessed that it needs officers who possess a high level of education and who are knowledgeable of science and technology.

The PLA Navy, like the entire PLA, has also concluded that relying solely on its own military academies to train its officer corps is inefficient and undermines the quality of its training. To deal with this issue, the PLA has decided to rely increasingly on the civil education system to educate some of its officers.

Traditionally, and up and through the late 1990s, graduating from a military academy was the most common method of officer commissioning. Over the last decade, this trend has begun to change, and the PLA has set a goal that by 2010, 60 percent of the officer

corps should be civilian college graduates.

Assuming the PLA is on track to reach its goal by next year, as media reports suggest, we may infer that civilian college graduates comprise an increasing percentage of new PLA Navy officers. And while the PLA has been increasing its reliance on civilian college graduates, Chinese media report that this program has also experienced several problems. Foremost among them has been fierce competition from more lucrative private sector opportunities.

Even after the PLA successfully recruits civilian college students, they receive only limited military training prior to unit assignment and are thus difficult to integrate into their operational force.

Additionally, the influx of civilian college graduates may be responsible for some problems with morale and unit cohesion within the PLA. For example, a number of cases in the Chinese press report that some civilian college graduates will resist assignment to isolated posts or resent the fact that their post-graduation training is usually led by an NCO with a high school education.

It remains unclear how quickly or successful the PLA will be in dealing with these issues.

Third, and finally, the PLA Navy is increasing its training for nontraditional security missions both as a means of protecting China's expanding maritime interests, as well as a method for sensitizing regional countries, including the United States, to the PLA Navy's increasing operations at greater distances from Chinese waters.

The 2004 New Historic Missions represented a change in China's thinking about the role and uses of its military forces. China now places a higher priority on military operations other than war as key PLA missions.

PLA Navy training for these operations currently focuses on disaster relief, including supporting law enforcement organizations to combat smuggling and drug trafficking; demonstrations of force and acts of deterrence; participating in maritime security cooperation, including peacekeeping and counter-terror operations; conducting military diplomacy; and at-sea search and rescue missions.

I would also add, as Mr. Cooper mentioned in his testimony, that these nontraditional security operations provide an excellent venue for the PLA to provide its officers with real war operational experience they would not otherwise be able to get.

So, in conclusion, I would note that over time these reforms are likely to lead to enhanced operational capabilities, but it is very difficult, if not impossible, to assess this trend relying on open-source materials. We may speculate, however, that these increasing PLA Navy operational capabilities are being reflected in ongoing operations

such as the current deployment off the Horn of Africa.

Thank you very much. I look forward to your questions.

[The statement follows:]

**Prepared Statement of Frederic Vellucci
Recent Trends in PLA Navy Training and Education**

**Testimony of Frederic Vellucci⁵
Analyst, CNA China Studies**

**Testimony before the U.S.-China Economic and Security Review Commission
“The Implications of China’s Naval Modernization for the United States”**

June 11, 2009

My testimony will address three factors the PLA assesses as crucial for transforming modern hardware into an effective naval force: first, the PLA Navy’s ability to conduct standardized training focused on the requirements of naval warfare; second, the PLA Navy’s ability to attract and train an educated and capable officer corps; and finally, its ability to perform an expanded array of nontraditional security missions.

Drivers of PLA Navy Training Reforms

There are two major drivers to recent and ongoing reforms to the way the PLA Navy conducts training. The first involves the changing nature of modern warfare. The second involves the creation of a critical mass of new Chinese maritime security interests.

The changing nature of modern warfare first became an issue for the PLA in the mid-1990s. At that time, PLA assessments of the U.S. military’s OPERATION DESERT STORM initiated a paradigm shift in Beijing as PLA planners became convinced of the importance of high-tech forces. As a result, the PLA endeavored to transform itself from a force composed of large numbers of outdated weapons systems and poorly educated personnel to one composed of fewer numbers of advanced weapon systems and staffed with highly-trained personnel well versed in the latest advancements in science and technology. Throughout the late 1990s and into the present decade, the PLA has continued to revise its definition of what it means to be a “modern” military. In the late 1990s, the ability to conduct combined-arms and joint operations were added as vital capabilities. By 2002, increasingly lethal long-range operations utilizing information technology were seen as vital for providing strategic depth for the Chinese homeland.

The second and more recent driver of Chinese Navy training reforms involves the creation of a critical mass of new maritime security interests as a result of China’s

⁵ The views expressed are solely the author, and not those of any organization with which he is affiliated.

dependence on the world's oceans for transportation, resources, and access to markets. These newly expanded maritime rights and interests were an important justification for a 2004 reassessment of China's national military strategy that gave increased prominence to creating a Navy capable of undertaking a more diverse array of missions at greater distances from Chinese territorial waters.

Standardized Training: The PLA Navy places a premium on standardized training to accomplish a range of increasingly diverse and complicated missions.

To understand the PLA Navy's ongoing efforts to simultaneously reform and standardize the way it conducts training and its impact on PLA naval modernization, it is important to note that all militaries are tasked to train for the type of operations they will potentially be assigned to conduct. In other words, they must train the way they expect to fight. The problem from a PLA Navy trainer's perspective is that between 1993 and the present, the PLA's definition of the capabilities required for "modern warfare" has been repeatedly revised and updated.

The PLA issued revised training guidance to reflect these changes in the early 2000s. Two critical documents that the PLA used to disseminate that new guidance included the Outline for Military Training and Evaluation, which was revised and reissued in 2001-2002 and then again in 2009, and the PLA's Training Regulations, which were revised in 2002. These two documents are outside the public domain so there are limits to what we can say about their substance. Through a careful reading of Chinese materials we *can* glean basic information about their contents. The important takeaway here is to note that the PLA has been busy during the past 8 years trying to codify and standardize the way it conducts training and develop the capabilities it perceives as required for fighting modern wars.

The Outline for Military Training and Evaluation is likely a compendium of documents which serve as the most basic guide to PLA training. They provide guidance on training goals, content, timing, as well as methods of quality control and assessment. As far as the PLAN was concerned, some of the key reforms to navy training in the 2002 Navy OMTE included a new emphasis on training for officers and NCOs; for example, the 2002 PLA Navy OMTE called for command-track officers to focus on strategy, tactics, and innovation. To provide officers with the opportunity to focus on these issues, NCOs were assigned greater responsibilities for some tasks formerly performed by officers including overseeing training for new personnel; it also directed the navy to increase its use of simulators for training on new equipment and training combat methods, and to move away from scripted training events.

Shortly after Beijing issued the new PLAN OMTE the PLA released updated Training Regulations. The 2002 regulations replaced outdated training regulations that had been in force since April 1990. According to former Chief of the General Staff Fu Quanyou, new training guidance within the Regulations represented the CMC's strategy for building a powerful military that relies on advanced science and technology. Fu stated that this

strategy was a policy response to rapid advancements in military technology in the 21st century.

Important changes to the 2002 training regulations included adopting training assessments as a factor for consideration in officer promotions, establishing procedures for integrating military academic research into operational training, codifying the required use of base training, simulator training, and network training. Finally, the regulations also included new content emphasizing joint training, training for high-level headquarters, and non-combat operations.

In 2004, just two years after the PLA Navy was issued a brand-new, standardized body of guidance for the way it should conduct training, Hu Jintao issued the *Historic Missions of the Armed Forces in the New Period of the New Century*.⁶ Of importance to the Navy, the *New Historic Missions* tasked the PLA to not only be prepared for the usual missions of deterring Taiwan independence and protecting China's maritime interests, but also to be prepared for safeguarding China's expanding economic interests including sea lane security and energy security. As a result of these new and expanded PLA missions, in June 2006, the PLA issued a directive to revise the OMTE to ensure that the PLA was capable of fulfilling these new missions.

The new OMTE was released to the entire PLA for study in the second half of 2008 and it became effective on January 1, 2009. New training objectives include focusing training on electromagnetic environments, focusing on training for specific missions and developing problem-solving skills, utilizing military training coordination zones, and training for an expanding array of peacetime non-combat operations. Some of the 2009 OMTE training objectives are not new, which suggests that the CMC is either reiterating their importance or perhaps suggesting that improvements are still required. These include the emphasis on so-called "actual combat" training, training against opposing forces, using training as a tool for evaluation, and using training bases, and simulator training. The fact that the PLA press continues to report these remaining items as areas requiring standardization and improvement suggests they have still not been satisfactorily integrated into PLA training. Based on the 2002 precedent, we may speculate that the PLA will soon revise or reissue its training regulations to reflect the 2009 changes to the OMTE.

A second major PLA Navy modernization initiative concerns revisions to policies for commissioning and training its officer corps. The PLA has concluded that efforts to standardize and perfect training will be ineffective if the PLA doesn't have the right people being trained.

⁶ For an excellent overview of the Chinese Armed Force's New Historic Missions, see Daniel M. Hartnett's unpublished paper, "Towards a Globally Focused Chinese Military: The Historic Missions of the Chinese Armed Forces," Summer 2008.

Personnel Reforms: New methods of officer commissioning reflect a paradigm shift in the PLA's conception of modern warfare.

The PLA Navy needed officers who were more knowledgeable of science and technology, officers who possessed a high level of education, and who were politically reliable with diverse practical experience. In terms of this diverse experience, the PLA has assessed that officers should have both operational and managerial experience since such officers are likely to have a high degree of military professionalism, a well-developed ability to think strategically, and the competence to command forces in battle. Commissioning and training of these scientifically and technologically savvy officers is an old objective that has proven elusive for the PLA.

At present, new officers come from three sources: high-school students applying for admission to PLA academies, active-duty enlisted personnel applying to PLA academies, and civilian college graduates. While the total number of officers is unknown, numerous PLA reports suggest the proportion for officer sourcing is changing. Traditionally, and up through the late 1990s, graduating from a military academy was by far the most common method of officer commissioning. Over the last decade this trend has begun to change and the PLA has set a goal that by 2010, sixty percent of the officer corps should be civilian college graduates. Assuming that the PLA is on track to reach its goal by next year as media reports suggest, we may infer that civilian college graduates comprise an increasing percentage of new PLA Navy officers.

The PLA Navy, like the entire PLA, has concluded that relying solely on its own military academies to train its officer corps is inefficient and undermines the quality of training.⁷ The PLA has decided to rely increasingly on the civilian education system to educate some of its new officers. At present there are two paths into the PLA for civilian college students. The first path is through the National Defense Scholarship program. National Defense Scholarship Students are recruited in high school or during their first year of college to study in a ROTC-like program at one of a select number of Chinese civilian universities. As students, they receive a scholarship plus stipend, and complete some military training concurrent with their studies. Upon graduation they enter the PLA as active-duty officers.⁸

⁷ Zhang Yongyi, Ed., *Haijun Junshi Xunlian Xue* (The Science of Naval Training), Academy of Military Science Press (Beijing: 2006) p. 231

⁸ As of late 2007, National Defense Students were being educated in 117 civilian colleges and universities. These students were said to be studying 143 different majors including management, philosophy, law, engineering, and medicine, with special emphasis placed on science and engineering including electrical, engineering, mechanical, aviation, and aerospace engineering. As part of the overall program, the PLAN has developed contractual relationships with 14 civilian universities to educate PLA Navy National Defense Students.

As a relatively new program, the number of National Defense students entering the PLAN is continuing to grow. For example, while 600 National Defense Students were commissioned as PLAN officers in 2006, the average size of the 2007-2010 graduating classes will be more than double the 2006 class, at 1,250 students. In addition to National Defense Students, PLA Navy on-campus recruiting offices also recruit from among the population of graduating seniors. We may speculate that some students view the PLA as an attractive opportunity in the current troubled economy.

While the PLA has been increasing its reliance on civilian college graduates, Chinese media report that this program has also experienced several problems. Foremost among these problems have been difficulty integrating these students into the operational force upon graduation. These students receive limited military training prior to unit assignment, and most are assigned to technical or service support career-tracks as opposed to the operational, or warfighting, command track. Additionally, the influx of civilian college graduates may be responsible for some problems with morale and unit cohesion within the PLA. For example, a number of cases in the Chinese press report that some civilian college graduates will resist assignment to isolated posts, or resent the fact that their post-graduation training is usually led by an NCO with a high school education.

Training for Nontraditional Security Missions: Navy training for these new types of missions is a response a newly perceived “critical mass” of maritime interests.

The new military missions issued to the PLA in 2004 included a heightened emphasis on a number of tasks which fall primarily within the PLAN’s purview, including maritime territorial disputes, sea lane security, and defending maritime rights and interests. Significantly, these *New Historic Missions* as the PLA refers to them have also increased the importance of military operations other than war (MOOTW) including fighting terrorism, and conducting peacekeeping, and humanitarian assistance operations as key PLA missions.

As a result of the new domestic and international security environment, China has changed its thinking about the role and uses of military forces and now places a higher priority on non-traditional security operations in PLAN training.⁹ MOOTW have already become an important component of PLAN military operations. The PLAN is currently training for five main types of MOOTW:

- Disaster relief and supporting law enforcement organizations to combat smuggling and drug trafficking
- Demonstrations of force and acts of deterrence
- Participating in maritime security cooperation including peacekeeping and counter-terror operations
- Conducting military diplomacy

⁹ Zhang Yongyi, Ed., *Science of Naval Training*, p. 250

- At-sea search and rescue actions¹⁰

Increasing PLAN training for nontraditional security missions is seen both as a means of protecting China's expanding maritime interests as well as sensitizing regional countries to the PLA Navy's increasing operations at greater distances from Chinese waters.

Conclusion

First, PLA Navy training reforms and officer commissioning policies appear directly tied to the PLA's perception of modern warfare and new PLA missions. Yet at the same time, the PLA's concept of what it means to be a modern force has been continuously evolving. This greatly complicates the PLA Navy's efforts to standardize and improve the quality of its training when Beijing continuously revises what it is that the PLA Navy should be training for.

Second, the standardization of training regulations and new officer commissioning represents a paradigm shift in the PLA's understanding of modern warfare and is indicative of new levels of professionalism. At the same time, PLA Navy writings have concluded that its training and education system has thus far been unable to produce sufficient numbers of high quality officers required for modern warfare. Thus, the PLA Navy's future operational effectiveness depends on integrating civilian college students into the force. The PLA is still experimenting with ways to make this happen while minimizing division to the force. It remains unclear how quickly or successfully they will deal with this issue. I would speculate that a short-term economic down-turn could be beneficial for the PLA in that it would neutralize some of the fierce private sector competition for China's best and brightest. It could make a career in the military seem like a more attractive option for a larger number of better qualified college students.

Third, over time, these reforms will likely lead to enhanced operational capabilities, but it is impossible to assess this trend relying on open source materials. We may speculate however, that these increasing PLA Navy operational capabilities are being reflected in the ongoing PLAN operations off the Horn of Africa.

Thank you very much, I look forward to your questions.¹

Panel III: Discussion, Questions and Answers

VICE CHAIRMAN WORTZEL: Thank you for taking the time to talk to us and to give us your thoughts on these issues.

The first question will be from Commissioner Wessel.

COMMISSIONER WESSEL: Thank you, gentlemen. Appreciate your being here today.

¹⁰ *Ibid.*

I don't know whether we have an internally inconsistent policy or an internally inconsistent approach to this that I would like your help understanding a little better.

On the one hand, we welcome China's projection of power as it relates to peacekeeping missions, as it relates to the piracy, et cetera. On the other hand, we're concerned about certain capabilities that not only go beyond access denial but offensive capabilities. I think you mentioned, for example, deep-water torpedoes, et cetera.

Many believe that China as a rising great power is right to be able to defend its interests and be able to expand its ability to project power for resource protection, et cetera.

What operational capabilities should concern us most? Have we passed the tipping point at which we are now looking at China as a defensive threat, I mean as a military threat, or are we not at that tipping point and what indicators should most concern us? Please, both.

MR. COOPER: I'll take a first stab at it. Actually, I do think we sometimes have inconsistency in our approach to the sorts of maritime operations that the Chinese have been involved in and potentially will become involved in in the future in terms of being concerned about the increased professionalism of the force, as Fred mentioned.

I think that we should welcome increased professionalism of their capabilities as seamen, as naval operators, in support of peacekeeping operations, in support of anti-piracy operations, counterterrorism operations, any number of other nontraditional threats; and I don't think that we should have any allergy whatsoever to that-- it should also help in terms of deconflicting any maritime issues that might be involved as China's Navy naturally begins to go out, just as their economy has gone out and their diplomatic efforts have gone out.

I think what instead we should be watching for and should be very concerned about and address with the Chinese, as well as with other regional partners, are specific capabilities that are designed to deter, delay or deny freedom of movement, freedom of action of U.S. naval forces in the Pacific, and then perhaps in the future into the Indian Ocean and Straits of Malacca.

And by that, you look at the development of capabilities, which we're beginning to see more and more reports about the expansion of their ballistic missile capabilities to include an anti-ship capability.

Again, that's not a matter of professionalizing their Navy for operations that are important for freedom of navigation and for supporting international efforts for maritime security. These capabilities are specifically aimed at forces, like U.S. forces, that have to move rapidly to help address regional contingencies and problems,

and I think they pose a great concern. So it's hard to see, as Fred mentioned, sometimes in the open sources, exactly what specific activities we should be concerned about.

But I think if you look at the programs and if you look at the systems that come on line, and then I think if over time we see an increase in the transparency of their exercises, their training activity, and they give us more information about that--and they're beginning to do so in some sources, but there are still some problems there--then I think it's much easier to separate out those things that are specific to creating a more professional naval force and those things that really are improving combat operations that are not specific to any threat right now to China's continued economic growth or national development.

MR. VELLUCCI: To that I would just add that I'm very reluctant to judge Chinese intentions based solely on their capabilities. For example, these nontraditional security operations that it seems everyone thinks is a good thing, contributing to world peace and security, such as the anti-piracy operations, perhaps--there's been talk recently of Chinese involvement stopping North Korean vessels at sea--these are good things, but these capabilities could also be used to interfere with the lawful activities of foreign vessels in China's exclusive economic zone.

On that note, I would point out that while there is limited consensus in China that its Navy needs to be stronger than it was, say around the year 2000, there is very much a debate going on as to how much stronger? I don't think they've decided what type of Navy they want to build yet, and I think we should be as sensitive as possible given the difficulties of nontransparency to their intentions, and it's very important for that reason to remain engaged with them and actively attempt to shape what type of Navy they will become.

COMMISSIONER WESSEL: If there's a next round, I'd like one. Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Fiedler.

COMMISSIONER FIEDLER: Do either of you know how far from China's coast its submarines have operated? What's the farthest?

MR. VELLUCCI: I don't have that information. I know it's more than a thousand nautical miles. I don't know how much more.

MR. COOPER: That's about right. I do know that there was, as their submarine force has become more modern--I think I've got it in my longer testimony--there was a time when they were down to, probably in 2006, maybe only two of what would be called "out-of-area patrols;" and those are patrols that would have gotten out beyond that first island chain that I talked about.

And some of them could potentially be closer than that but still

be anomalous in terms of the time, duration of deployment, and length of the patrol. One report has them back up again, as of 2008, to about 12 of those so-called "out-of-area patrols;" so that's a significant increase after a period where they were modernizing the force, and they continue to modernize it.

But now they do appear to be doing more of those out-of-area patrols. As far as I know, that's probably about right, about a thousand nautical miles.

COMMISSIONER FIEDLER: And their tracking by their submarines of U.S. naval assets? After the Kitty Hawk incident?

MR. COOPER: That's the last publicized incident I know about. Do you know of any other?

MR. VELLUCCI: No, I don't. Open source media reports of Chinese submarine activities are very rare. It's not something that is really possible, as Cortez mentioned, to track in news reports.

COMMISSIONER FIEDLER: Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Mulloy.

COMMISSIONER MULLOY: Thank you, Mr. Chairman. Thank you, both, for being here. Terrific testimony.

My question is directed to Mr. Cooper, but feel free to jump in, Mr. Vellucci.

Mr. Cooper, on page 12 of your testimony, you say you told this Commission back in 2006 that, quote: "China's leaders appear to believe that diminishing U.S. influence and access in Asia must eventually occur to accommodate China's reemergence as a great power."

You still believe that's the case today?

MR. COOPER: Yes, sir, I do.

COMMISSIONER MULLOY: So, in other words, they feel they have to strengthen themselves and at the same time reduce our influence in Asia in order to emerge as a great power?

MR. COOPER: I believe that. I would probably put the second half of that a bit differently. From my understanding in reading in Chinese sources over the past ten to 15 years is that I would place many of their leaders in the realist school of thinking; and it's not that they have a zero sum stance regarding Chinese and American power, but I think they tend to believe that their growth in relative power will mean a reduction in the power of the primary player in that region right now which is the United States.

COMMISSIONER MULLOY: Good.

MR. COOPER: I do believe that.

COMMISSIONER MULLOY: Now, then, you go on further, and you say, okay, even if you take that as a given, and I will take it as a given, you still recommend a policy approach to cooperative security

and market mechanisms to alter this thinking. What do you mean by that?

MR. COOPER: Okay, sir. I will try as briefly as possible to get back to that. I did submit, I believe, after my 2006 testimony, an addendum to the record, which has a few--it expands a little bit on some of those points. So I would point you in that direction.

But I will cover a couple of things to hopefully help to answer that, and the first is that, I believe that discussion of relative power and to what extent the U.S. influence and access in Asia might diminish for China to realize all its national development goals is still a source of debate in China.

Again, I don't think that that's, by any means, a zero sum game, and I think that we can affect that debate; and I believe that in doing so, policies and activities that appear to confirm in the Chinese mind that America is bent on containment will be counterproductive.

COMMISSIONER MULLOY: Okay.

MR. COOPER: I believe there are a number of things that we can do in the policy realm that can help to alleviate that. One or two of them are probably fairly controversial. I think that in certain sensitive areas like space, that we should be discussing cooperative possibilities with the Chinese more often than we do because of our fear of them learning more about a certain area than we would like them to.

I think that we should still be able to hold dialogue in some of those areas. Certainly, oil security is one of those areas, and we've discussed here on this panel maritime security. I think if maritime security architectures are such that the Chinese really don't have, and regional players see that they don't have a reason for developing power projection capabilities--and I separate those out from force projection because a certain amount of force projection is necessary--

COMMISSIONER MULLOY: I have limited time, but if we took as a given that they want to strengthen their capabilities by weakening us, and you say, well, continue cooperative security and market mechanisms--I'm not quite sure what market--but what, let's stipulate that I could show you that China's economic, financial and trade policies are designed to strengthen their capabilities and weaken America's capabilities, do you think it would be in our national security interests to alter those policies?

MR. COOPER: Your question is if our policies were allowing them to do that, to weaken our position because of their market position, I think in those cases our policies need to change; but I believe that we have not, particularly in East Asia--in all of the evolving security and economic architectures in East Asia--I don't believe that we have necessarily in our policy paid enough attention to

those to engage the Chinese.

I don't think in any area right now it's a given that they are designing any of their economic policies specifically to weaken the U.S.

COMMISSIONER MULLOY: Fine. Thank you. My time is up. Maybe we can come back to this.

VICE CHAIRMAN WORTZEL: I'll put you down for a second round if we come to it.

I have a question for each of you, if I could, based on your testimony.

Mr. Cooper, you talked about or quoted Admiral Wu Shengli on large-surface combat ships, super-cruising combat aircraft. I'd ask you to talk a little bit more about the naval aviation capacity that you say is either nascent or that has to be built to go along with this greater maritime power, whether that's in reconnaissance aircraft or long-range bombers or in the ability to provide air support and counter air to these naval formations.

Mr. Vellucci, I'm not certain what "military training coordination zones" mean. So if you could just educate me.

Go ahead.

MR. COOPER: Okay. I'll go first. The question is on naval air forces and what the developments and trends there might indicate?

The specific PLA naval air forces and their ability to support littoral combat has been fairly weak traditionally. It is getting much better. I'm not, I don't follow that force specifically, but it is getting much better, and again I think the fact that the PLA Naval Chief, that Wu, actually stated that among his top two to three priorities is a super-cruising fighter which would extend the combat radius of naval aviation and would allow them to put capabilities on target faster and at greater range, certainly is part of extending their capability to conduct regional warfare.

I don't see any programs that I know of other than the carrier program that are looking at extending that sort of aviation capability beyond the region. And, again, I think it's one of the areas that we need to look at.

There have been reports in the past of a strategic bomber. That would probably belong to the air forces as opposed to the naval air force, but it would certainly be in support of more global or extra-regional force projection; but those reports, as far as I know, have never been accurate. There is no strategic bomber in the force. They still have air-deliverable, long-range precision-strike weapons, and they're moving their capability out, as I said, potentially eventually to about a thousand miles off the coast, but that still does not equate to global power projection.

So again, they're getting better for regional warfare. They recognize it as a priority, but they're coming from a fairly low baseline.

MR. VELLUCCI: These military training coordination zones based on the information that I've found relating to them--are a relatively new development. They were introduced maybe five, six years ago, and relate to the PLA's efforts to develop joint operational capabilities.

I've seen references to at least eight of these coordination zones, but there really isn't a whole lot of information available. They are designed to provide an institutional mechanism to bring the services together and get them used to working with one another during training. It also proceeds from a recognition on the PLA's part that if joint operations are going to work, people at much lower levels in the command structure are going to not only have to understand the other services in terms of the equipment they possess and their capabilities, but also know how to talk to the other services and coordinate command and decision making during operations.

That's about all I can say based on what I've seen, but I would be happy to conduct additional research and get back to your staff.

VICE CHAIRMAN WORTZEL: Is a geographic area like Huangshan Range in Anhui the type of thing you're talking about where they begin to do joint training?

MR. VELLUCCI: That's something I'm not entirely clear on. While the eight coordination zones that I've seen are spread out geographically around China, I'm not sure that there is one geographic location they go to whether or it's more of an institutional mechanism that just opens lines of communication.

VICE CHAIRMAN WORTZEL: Thank you very much.

Commissioner Videnieks.

HEARING COCHAIR VIDENIEKS: I have a couple of questions regarding training, primarily to you, Mr. Vellucci. And it's also deployment in a way. What part of the PLAN would you say is involved in internal security and has the revised training taken that need or that reality into account at all?

MR. VELLUCCI: I'm sorry. Could you repeat your question? What aspect is the PLA Navy involved in internal security?

HEARING COCHAIR VIDENIEKS: My basic question was to what extent is PLAN asserting a more, if they are, assertive a role within the PLA?

MR. VELLUCCI: Right. Okay. Well, for China's internal security, they essentially have layers of defense, and the primary goal is to ensure that the PLA does not have to become involved in internal security. That is essentially the main lesson of 1989. They do not

want the PLA conducting internal security operations.

The Ministry of Public Security Forces – China's civilian police officers – are the first responders. If they can't handle it, they will then move to the People's Armed Police. It should be noted that after Tiananmen, a number of PLA divisions were downsized, and transferred to the People's Armed Police as mobile divisions where they remain today. If the regular Police can't handle it, they will then move to the People's Armed Police. If they can't handle it, they may call in the mobile divisions, and then if it gets to the point where you need to call in the PLA, something bad has happened.

HEARING COCHAIR VIDENIEKS: Understood.

The increasing role of the PLAN in the PLA, is that reflected in the training also?

MR. VELLUCCI: The increasing role of the PLAN as, you mean its importance as a service?

HEARING COCHAIR VIDENIEKS: Yes.

MR. VELLUCCI: I would say that that relates to the rising importance of joint operations capabilities and training. And this goes back to the promotion of the PLA Navy Commander to the Central Military Commission, as well as training innovations such as the adoption of military training coordination zones. There is a recognition that the services need to be elevated in importance in order to successfully conduct joint operations. Beyond that, I'm not sure.

HEARING COCHAIR VIDENIEKS: The other thing would be this--are the traditionalists of the Communist Party raising some objections to the fact that now the PLA has an officer corps, a developing NCO corps, and then the enlisted people, whereas, in Vietnam, General Giap rose from bottom to the top. This is for both you gentlemen. Is there an internal debate? Are traditionalists opposing the structure of the current PLA including PLAN?

MR. VELLUCCI: In terms of the officer NCO enlisted structure, I have read nothing to show that anyone is openly opposed to the professionalization of the PLA. They all see this very much as in their interests and recognize that it is prerequisite to conducting new types of operations, whether joint or informationized. There is broad consensus within the PLA that they must be professionalized.

HEARING COCHAIR VIDENIEKS: Okay. Sir?

MR. COOPER: I think that's very well put. I agree completely with that. Fred mentioned the elevation to the Central Military Commission of other than ground force generals. That was a ground force-dominated PLA that made the decision to do that. And they made a recognition, and it's reflected in their programs, to elevate the air, maritime and missile forces necessary to be able to conduct operations, specific operations against Taiwan; and now since 2004

particularly to begin to look at how that then applies to a broader set of mission areas that they've got to conduct.

But on a smaller scale, within the PLA, both in terms of administrative organization and potential transition to wartime structures and the personnel structure itself, this is an area of great ferment right now, and it's really kind of hard to peg down. You get a lot of different debates in the sources about what the future of military regions might be, and how the PLA might better develop its NCO corps.

That's still very much an ongoing debate in terms of are these guys going to continue to be primarily technologically focused and skill-set focused, or are they going to become more leadership focused in their NCO corps? And that's still very much open to debate and--

HEARING COCHAIR VIDENIEKS: So can now someone rise from enlisted ranks and become the commander of the army in China? Is the structure there to allow that, or would one have to go first to OCS?

MR. COOPER: I believe it can still happen. I don't know of any recent examples, and again we might be at a period in between with the more recent establishment of the NCO corps where that might happen less frequently. It certainly has been the case traditionally that in certain cases it can happen.

I still think it can, but increasingly that will involve specific training and specific institutions along the way.

HEARING COCHAIR VIDENIEKS: A slightly different question. Is China now becoming a maritime nation?

MR. COOPER: Yes.

HEARING COCHAIR VIDENIEKS: Both of you. Yes?

MR. VELLUCCI: Yes.

HEARING COCHAIR VIDENIEKS: Okay.

VICE CHAIRMAN WORTZEL: Commissioner Slane.

COMMISSIONER SLANE: This morning, we had testimony on the anti-ship ballistic missile as a game changer. Do you concur with that analysis, starting with Mr. Cooper?

MR. COOPER: Yes, I do. And again, as I said in my longer testimony, I believe that there are probably about three specific capabilities, two or three specific capabilities of great concern to me in terms of their ability to conduct anti-access operations, and that's one of the primary ones.

Looking at the reports out there so far analysts fear that this will be a paradigm changer, be a game changer. Again, I don't think we really know. At least I haven't seen yet what the capabilities are.

MR. VELLUCCI: I think I would agree with that, but I'd also repeat some of the comments that Admiral McDevitt made this

morning, that just as they rely increasingly on these more advanced weapon systems that need to use space-based information, surveillance, and things like that, they also open themselves to new vulnerabilities to attack.

So while it would be a significant development, it might not be a game changer necessarily.

COMMISSIONER SLANE: Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Wessel, back to you.

COMMISSIONER WESSEL: Thank you.

Let me, if I can expand on the line of questioning I had before about the operational capabilities and the tipping point, and certainly we just heard some comments on that.

What most concerns you, and do you believe, even though I believe it was Congressman Forbes who indicated there is some lack of transparency in what our own forces are doing at this point, what capabilities should we be expanding upon to respond to this, and do we have enough bilateral discussion to talk about what we would view as appropriate and inappropriate operational capabilities? This is for both witnesses.

MR. COOPER: I take that in two parts. The first is those capabilities that the U.S. should be focused on as a maritime power in order to ensure our freedom of movement and our freedom of navigation.

COMMISSIONER WESSEL: Well, and we had the ground-based missiles and the concern about that in terms of anti-access.

MR. COOPER: Right.

COMMISSIONER WESSEL: What other capabilities is China developing? I think you again mentioned the deep-water torpedoes, et cetera, that you believe clearly create an operational, tilt the operational field to an area that we should be concerned about, and what operational capabilities do we need to be developing that we may not be at this point?

MR. COOPER: Well, certainly one of them was just discussed. If, as many analysts seem to fear, the anti-ship ballistic missile capability is going to be formidable, if it's going to be a capable system, then understanding how that works as a system of systems, as Fred noted. It's not just a missile, but there's a lot involved in targeting. To understand that and to have countermeasures is critical.

I think two other areas. Because they do rely on their submarine force for their capabilities to project some level of force farther out from their shores our anti-submarine warfare capabilities certainly should improve.

I think that there's also a problem with a very, very large mine

inventory which is very advanced and modern, and our ability to understand how they intend to employ that and to develop countermeasures for that, for our counter-mine warfare needs to be very robust--and I would say those are probably the two primary areas other than the ASBM that we've discussed.

COMMISSIONER WESSEL: But that would appear to have already then tipped--their development, their inventory, as you've suggested, and their development of these capabilities would appear to have already tipped the scales in a way that we should view this as a threat, not simply the rise of their defensive capabilities in their regional operations?

MR. COOPER: It certainly should be a concern. Again, we are still so much better in so many aspects of maritime warfare that I don't want to sound the alarm too much, but those are areas where if we don't pay attention, there will be significant problems.

They're developing very good littoral warfare capabilities, and for us to be able to respond to crises anywhere in the region and have that freedom of movement and action, we need to be aware of those capabilities and know how we can deal with them.

COMMISSIONER WESSEL: Mr. Vellucci.

MR. VELLUCCI: I certainly agree with everything Cortez just said. I think anti-submarine warfare would be a key capability, as was mentioned in the earlier panel today, but in the long run, given that any type of access/anti-access competition, we're ultimately fighting on China's home field, and they're going to continue to enjoy that advantage.

I believe it would be unfortunate for us to get involved in a tit-for-tat, they build this/we build that, competition. But I think to avoid that, the most economical way, given the current times, is to invest in information warfare, to learn how to understand, penetrate and disable their systems before they can bring any of those capabilities on line in the region.

COMMISSIONER WESSEL: Thank you.

VICE CHAIRMAN WORTZEL: I had a second round, but now other commissioners that haven't asked in the first, so I'm going to finish that out, and it goes Chairman Bartholomew next.

CHAIRMAN BARTHOLOMEW: Thanks very much. Thank you to both of our witnesses.

Mr. Cooper, it's always hazardous, of course, when you remind us that you've said things several years previously because then we get to ask you, well, do you still agree and how have things changed? But since Commissioner Mulloy took that opportunity, I'm going to decline on that one.

I'm interested in exploring a little bit more broadly than just the

PLA Navy, in my first question, and then back to that in my second, civil-military tensions. Do we have any sense of where this is all going? As the leadership of the armed forces are being strengthened, as they are being professionalized, can we expect to see some tensions between the concept of a professional state army or an army that's designed to protect Party control?

MR. VELLUCCI: There certainly are tensions, civil-military tensions, but I'm not sure I would phrase it in terms of Party-state. I would think about it more in terms of the urban-rural divide in China. Because as they try and get more educated, highly qualified personnel, these are usually people from the cities who have had access to better public schools and services. They have gone to universities, and these are the people who are now being promoted upward through the PLA ranks. They are trending towards a situation where their officer corps is urban and highly educated, and the vast majority of your conscript force comes from the countryside. So I would think that the primary division would be in terms of civ-mil relations.

MR. COOPER: I agree with that, but I will go up a level to sort of expand on that. I think that the Party-state army debate probably, and I'll step out on a limb because I'm not sure--again, I haven't looked across the sources for this--but in what I've seen, and I think in the trends exhibited since Hu Jintao's military guidelines have taken shape over the past four to five years, that the position of the PLA as a Party army with specific guidance to support and defend and enhance the control of the Chinese Communist Party has strengthened.

Over that time, despite the fact that reform has often caused us to categorize the Chinese leadership as less idealistic and more pragmatic, that despite that trend, there is still a very, very strong place within the PLA for the political commissaria and they still have the political work within the PLA.

Now, the focus of it has changed, but it is still very strong, and it is still specifically designed to ensure that Party guidelines are carried out and Party directives are carried out--and I think that's still very strong within the PLA.

CHAIRMAN BARTHOLOMEW: Okay. My second question is, in terms of decisions about the naval modernization, who is in control of that decision-making process? Are these decisions being made by the Party? In other words, are they military decisions that are being made? Are they Party decisions that are being made? Who's controlling the decision-making process?

MR. COOPER: The Central Military Commission of the Chinese Communist Party is making these decisions ultimately. Now, that's an oversimplification in terms of the information flow that feeds into their programming and budgeting cycle, and again I'm no expert in the

ramifications of that cycle and the processes therein, but I think if you look at the programs that Admiral Wu laid out, and that you can look at other services having laid out, or at least what's made public, these service chiefs I think are probably much more openly and vocally advocating certain programs that we can see in some of the sources.

I think it indicates a pretty robust and competitive process, and then one that is bureaucratically settled within the CMC.

CHAIRMAN BARTHOLOMEW: Mr. Vellucci.

MR. VELLUCCI: Yes. I think that's exactly right. I would just point out that while it's the Central Military Commission of the Chinese Communist Party, there also is a mirror Central Military Commission of the state bureaucracy that essentially doesn't exist, but the key point to emphasize is that it is the Party making these decisions, and then again to reemphasize just because it is the Party making these decisions, it doesn't mean they're bad military decisions.

As Cortez said, you have the service commanders who are actually providing all the feedback. So do we call it a Party decision or a military decision? It's really hard to splice it.

CHAIRMAN BARTHOLOMEW: Okay. Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Cleveland.

COMMISSIONER CLEVELAND: Just to follow up on that, would you be likely to be promoted if you made a sound military decision that was inconsistent with Party guidance? Where is--what I'm trying to figure out is where does the seesaw balance?

MR. COOPER: That is a very good question and a very tough one. I believe that with a more professional force comes a much more meritocratic system. Now, it will be a stretch to call the system completely meritocratic in any nation and particularly in China.

But I think it is more so, and I think we've also seen probably more from mistakes that have been made perhaps than from any specific good decision, what the reactions are. The commanders are held accountable, and very often now they're held accountable for the operational capabilities and operational, in some cases, perhaps failures.

Along with that, I'll say that I've seen over the past--and Fred can comment if I'm off base on this--but I've seen over the past probably six or seven years, in Chinese open sources, in military region newspapers and service papers and things like that, much more openness in terms of the shortfalls and shortcomings in PLA training they themselves are pointing out.

There is still a lot of boiler-plate about certain commanders that are to be held up as exemplars because they did this, this and this. And often there is a lot of political jargon in that but at the same time, they're much more willing to talk about true operational issues,

shortcomings, failures, of units or of groups that have to be built upon in the future, and I think that openness indicates that there is more professionalism; there is more recognition that operationally capable officers should be promoted and made examples of.

MR. VELLUCCI: I agree with that. I would point out that promotions in the PLA are still handled by the General Political Department, Cadre Department, and the thing that troubles me about your question, I can't imagine a scenario where Party guidance would contradict good operational decision, but should that be the case, then certainly each time an officer comes up for promotion, they have to have their political views examined. That's an excellent question.

COMMISSIONER CLEVELAND: This may be an easier question. You had in I guess a document that's in our briefing materials, Mr. Vellucci, a statement that one of the three main tenets of PLA Navy training reforms focuses on strengthening combined arms and joint training as a priority.

Can you talk a little bit about the joint training and why it's a priority, and is it joint as in the way I think of it, as U.S. services, Navy, Army, Air Force, Marine, or joint within? Is it a different term that you're using here in terms of definition?

MR. VELLUCCI: No, when I say joint, joint in the U.S. sense of the word although that's certainly not always the case for the Chinese. This goes back to the late 1990s when based on assessments of Operation Desert Storm and the changing nature of warfare, they had concluded that modern warfare was joint warfare and this was something that they needed to do, and then you have in 2002, they come out with new training guidance that kind of attempts to standardize and codify all of this.

COMMISSIONER CLEVELAND: Across services?

MR. VELLUCCI: Across services in theory, but then when you read about what the Chinese call joint training in media reports, it's barely even combined arms. Two different branches within the same PLA service they will call joint. Sometimes they're not even working together; it will be two different branches against each other in opposing forces. So this is around 2002.

Now, by 2004, they had incorporated new developments into their analyses. Based on U.S. operations in Kosovo, in Iraq I, they modified and refined their understanding of joint training. They've come out with these new military training coordination zones. It remains very much a priority, but to what extent they're actually approaching what a U.S. military officer would call joint operations, I haven't seen anything convincing in the newspapers.

COMMISSIONER CLEVELAND: Do they see it as a priority because they observed U.S. operations? Elaborate why do they see it

as a priority? What's the thinking behind it?

MR. VELLUCCI: The thinking behind it essentially, and please correct me if I'm wrong, Cortez, is that this is the way the United States military fights, and the United States has the most powerful military in the world. If you can handle a contingency involving the U.S. military, you can handle anybody. They just see joint operations as the way a modern war is fought.

COMMISSIONER CLEVELAND: Standard.

MR. COOPER: I agree. The discussion has been among their strategists in looking at U.S. operations since the first Gulf War, and the lessons that they've learned from that have not just been about joint warfare, but to some extent they have centered on that, and I think it is possible to look at some of their stated goals in their training outline and in some of their other documents--the stated goal that they will be able to conduct integrated joint operations is a buzzword they use often.

We still don't know what that means, but it's obvious that they are focused on improving communications' capabilities, network capabilities that will provide them joint capabilities in the future. It's very aspirational, but it certainly would not be, I think, in their minds, would not be completely different from what we would consider joint operations. They're just not there yet.

VICE CHAIRMAN WORTZEL: Commissioner Shea.

COMMISSIONER SHEA: Thanks for being here.

We're all in agreement that the PRC is rapidly modernizing its Navy; we agree with that? Okay. What I've sketched out what I perceive to be the goals of the naval modernization, and I want to see if you agree with that. Two short-term goals: to increase access denial in case of a crisis in the Taiwan Strait; secondly, to enhance the ability to assert territorial claims with respect to the disputed islands in the East China Sea and the South China Sea.

And then longer term would be protection of sea lines of communication and just general creation of a navy consistent with a world power.

Do you agree with that assessment, or would you add anything or subtract anything?

MR. COOPER: I believe that your short-term goals are accurate. Again, I would still be a little bit cautious in terms of enforcing or asserting territorial claims. Certainly, they're modernizing their navy to be able to do that, but as Fred, I think, noted a little bit earlier, drawing specific intent in that regard in terms of a specific target for certain capabilities, I would shy away from--but I think that the general statement you made is accurate.

I think those probably are, again, the two primary short-term

goals. I would add one to that, to the short-to-mid-term, and that is the capability to actually be able to deploy forces and I make a differentiation in my longer testimony between power projection and force projection, and again it's strictly my differentiation, but I think it's a valuable one because I believe they do want to be able to put forces in distant seas, as they have in the Gulf of Aden, and potentially to support U.N. peacekeeping operations.

Those operations have increased for the PLA over the past few years. The Navy has not been involved. These are mostly ground force involvements, but it could be that the PLA Navy will create capabilities to logistically support these operations in the near-to-mid-term.

You can look at those capabilities and say they could also improve their capabilities to support combat operations away from their shore as well; but I think that I would be very careful in characterizing that capability as nefarious when, in fact, it could well support peacekeeping operations.

So I would add that one.

COMMISSIONER SHEA: Okay.

MR. COOPER: And then over the longer-term, I believe that you summarize it very well as being a navy consistent with a maritime power. The question that's still out there that I believe will be, to some extent, if not answered, we'll at least get clues to the answer over the next two to three years--will be seen in the programs that they choose in order to be able to be respected as a maritime power and to be able to protect what they see as their economic lifelines.

COMMISSIONER SHEA: All right. So we have general agreement on goals. How would you grade China in achieving these goals on an A to F scale?

MR. VELLUCCI: I guess it depends on which goal we're talking about; right.

COMMISSIONER SHEA: Pick and choose.

MR. VELLUCCI: Your fourth, the near-term was anti-access and protecting maritime territory?

COMMISSIONER SHEA: I had assertion of territorial rights with respect to disputed islands, but Mr. Cooper thought I was overstating it or should be very careful in saying that.

MR. VELLUCCI: I'm not one who looks at equipment in any detail. I feel that I'm not qualified to grade without that knowledge.

MR. COOPER: I'll try. I'll step out on a limb. I've never been afraid to do that. In terms of increased access-denial capabilities, I think that it's very difficult to grade them on that in a vacuum; and by that, without conducting very good net assessments of their capabilities versus a specific force, opposing force, that they want to

deny access to. And, generally, of course, we're talking about our navy and our air forces flowing into theater for a crisis or a conflict. I think in that regard I would probably give them a C, and that's coming from a very low baseline. I think they've made significant progress in that area.

COMMISSIONER SHEA: You're a tough grader then.

MR. COOPER: Well, the grade would go up perhaps against a different naval force, and I think probably in terms of asserting their territorial claims, again, it would depend on who the parties involved in a conflict over claims in the South China Sea or resources were--they've developed some very good capabilities, probably a B in that area or a C plus, at least; but one of the serious problems in that is inexperience, is combat inexperience.

And while they'll gain some more experience in general sort of maritime operations in some of the international and regional exercises they get involved in, these are not major combat operations that they're involved in. So that has a tendency, I think, to pull that grade probably down.

In the longer term, there is still just a very, very long way to go. Again, protecting sea lines of communication, if you're talking about the Chinese themselves enforcing and protecting some maritime exclusion zone outside of their peripheral waters or something to do with one of the major SLOCs, they can't do it.

COMMISSIONER SHEA: Incomplete. Okay.

MR. COOPER: I'd probably have to still say F.

COMMISSIONER SHEA: Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Mulloy, we're back to you.

COMMISSIONER MULLOY: Thank you, Mr. Chairman.

Mr. Cooper, let me come back to this issue because I think this Commission was set up by the Congress to look at the relationship between U.S.-China, but the national security implications of the economic and trade. A lot of groups might be able to do a better job on just the military and other things. DoD probably. But we're charged to try and integrate that stuff, and so that's why I come back to this issue.

I agree with your statement that they want to diminish our influence in Asia to accommodate their reemergence as a great power.

I want to pick up that word "reemergence." What do you mean by reemergence? I think that's a very important concept to get out quickly, and then we'll move on.

MR. COOPER: I simply mean that prior to 18th century and some of the regional developments in the 19th century China was the central power in Asia.

COMMISSIONER MULLOY: Okay. So that's my understanding, too. They were the premier power in Asia. They had one of the most sophisticated civilizations, scientific and other things, and they ran into a bad 200 years, and they're understanding that this isn't good, and they're trying to figure out how to recapture their greatness.

Mao comes in and that was part of a struggle, and he came in and he tried one approach. Deng Xiaoping comes '78 and says no, no, guys, we need to get the foreigners in here to help us build this. We need to entice them to give us their technology, to give us markets and do other things, and that will help grow our comprehensive national power.

Okay. Now, Admiral McDevitt comes in before, and he says you guys have asked me five questions about what are the strategic implications of PLA modernization, he says, but I think you've got to give a broader look first and understand. And he says that the reason that China is emerging as a strengthened naval power is because they're a lot wealthier and because there have been economic developments that have made China a self-assured, rich and increasingly powerful power in Asia strategic thinking.

So something has happened economically over the last 30 years that has permitted China to emerge as a stronger economic and military and political power.

What I'm trying to understand, do you guys at all think about the present U.S. economic policies and financial policies toward China? I think you made mention before, somebody did, about you know they own a lot of our debt so we got to be careful.

Well, how did they get to own so much of our debt? They ran massive trade surpluses with us and then reinvested in our debt in order to help keep their currency underpriced. So this is part of--you could say this is part of a strategy.

Do you see that at all, and do you think that that needs, just from a national security outlook, needs to be investigated and perhaps changed?

And, Mr. Vellucci, if you could also comment.

MR. COOPER: I believe that since pursuing an "opening-up" policy and then followed by a "going-out" policy, the Chinese have pursued economic self-interests because with the demise of Communist ideology as their reason for being--for the Communist Party and their continued control--they've seized on economic development and economic growth as being the primary national development objective of China and the primary platform on which the Chinese Communist Party can maintain control.

They've tied their apron strings to economic growth and economic development. I guess it's hard to answer the question. I

don't think, and I'm not an economist, but to me there are no specific economic policies that have been made for purposes other than to ensure and reinforce Chinese economic growth.

I'm not sure in terms of all those parts of the question. There are certainly parts of that policy that we need to be concerned about and I think we are concerned in terms of the valuation of the currency and other issue areas.

But, again, these decisions are being made in terms of the return that they will give to the Chinese government, the Chinese investor, the Chinese people, over time; and there is significant concern on the part of the Chinese in this period of economic downturn as to how it will affect their national development, as well.

So, I think they understand and they said very clearly in their defense white paper in 2008, that this linkage between global stability and prosperity and the Chinese market, Chinese economic growth, that these things are intertwined, and of course that's a double-edged sword. So it's certainly something that is of concern but nothing that I believe supports anything other than the continued economic growth and the national development goals of China.

MR. VELLUCCI: Looking at the current U.S.-China economic relationship, I think it's important to go back to the period after Tiananmen when the first George H.W. Bush administration, and later supported by the Clinton administration, decided that we were going to support China's reform and opening engagement policies and encourage political liberalization.

It did not quite work out the way it was originally intended, but I think it is also important to look at what it has given us in the relationship. It has essentially made a stakeholder out of China whether they like it or not because they are well aware that if anything happens over Taiwan or any other conflict between the U.S. and China, that our relationship is gone, and with it, their engine for economic growth and stability of that Party depends on job creation. All of that is gone.

I think it's important to point out that it's not a straight line from Wal-Mart to the PLA--I think there are a lot of things in between, and we get a lot out of the relationship that is worth keeping and that we should be very careful about undermining this relationship

COMMISSIONER MULLOY: Thank you, both, very much.

VICE CHAIRMAN WORTZEL: Mr. Cooper, on page seven of your written testimony, you've got a very nice discussion in a paragraph about access to foreign port facilities, the use of economic aid, arms sales and diplomatic support, particularly to build up influence in Gwadar, Pakistan, Burma, Bangladesh, Sri Lanka.

And Mr. Vellucci, in your written submission, on page five, you

describe some of these things as military operations other than war--military diplomacy, exercises and access--and see it in PLA doctrine.

I'd be interested if both of you could address whether the type of force that you see the PLA beginning to build addresses that need or that desire for greater influence and access?

And then what parts don't? Obviously anti-ship ballistic missiles don't do that. So talk about that balance and which do you see as the preponderance of their development?

MR. COOPER: I would say that up to this point they are still very, very regionally focused, and when they do their threat analysis, at least that we're able to see in the open sources, it's obvious that they consider their periphery to be the area of concern, and so littoral or what we might call "green water" warfare, and some of the capabilities to enforce claims and to conduct anti-access operations are the priority.

Of course, we now see that probably a carrier program of some scope is in the works, and again for the sort of operations that they may be considering against Taiwan or in some other littoral, peripheral water kind of situation, that's not going to be an asset that's going to be very helpful at all.

So there are reasons for that program that relate to prestige obviously, but they also relate to being able to put some forces beyond their peripheral waters to expand that definition of the periphery outward; and certainly if you look at where they've been assisting in port construction, as I mentioned, this is primarily focused on looking at the Indian Ocean, the Andaman Sea, the Straits of Malacca, being able to at least have some capability to begin to put forces out there.

Too early to tell exactly what other programs, and I think that in my longer testimony, I asked a specific set of issue areas, or posed a specific set of issue areas that I believe that analysts must be looking at over the next year or two in trying to ascertain where programs are going regarding extra-regional force or even power projection.

And, some of the areas where you would maybe expect to see developments, there haven't been--but I think that we're sort of on the cusp of seeing where Beijing is going to go with these types of decisions, and in some cases, it's very obvious that they're getting at least some capability to extend their reach out into the waters that they consider to be economic lifelines.

MR. VELLUCCI: Yes, I agree. I think it's very much the beginnings of a program in terms of equipment that they've already fielded. The most notable would be the new hospital ship, which as I understand the decision to build was begun after the 2004 tsunami and the PLA Navy's complete inability to participate in that operation.

Beyond that, there's been a recent increase in training, both with

foreign navies as well as by itself in at-sea search and rescue operations, increases in port visits, but these are very much beginnings, and I don't think it's quite been reflected in the types of equipment they're building.

I would expect to see more, if not an aircraft carrier, then at least more flat-deck vessels capable of carrying helicopters at a minimum. But beyond that, I think it's very much just beginning.

VICE CHAIRMAN WORTZEL: Does it strike you that their long-term--I mean their strategic thinking is--what you've described is a very reactive. They decide they need joint stuff in reaction to the first Gulf War. They decide they need anti-ship ballistic missiles because what the hell do they do about two carriers off their coast. They went really flat on their ass in Bangladesh, and they said, oh, maybe we need a hospital ship. That's not a country that's planning far ahead.

MR. VELLUCCI: I would say that basically the new interests in non-combat operations on the part of the PLA Navy, on the one hand, it's public relations. It's a way to sensitize regional countries that look at us--we're here, we're doing something constructive, we're not going to take all of your islands.

Then, on the other hand, you've got to imagine that China's economy has been growing. It's been growing fast. There are more resources for the PLA. There has to be some type of competition between the services for these resources which while increasing are still limited.

Things are looking pretty good with Taiwan. What really, how else can they justify the need for continued high-level investments in the Navy? Those are really the two behind-the-scenes drivers that I see.

MR. COOPER: I'll make a couple of comments, and hopefully they'll get a little bit at what you're questioning here, and I think the first one is understanding, again, the low baseline from which the PLA has sprung since this great economic growth began and China began to debate what their security needs would be for the coming years.

I think that because of that, and you can see it in their doctrinal writings, there were certain areas where they felt like they had to catch up and they had to learn from the Western powers and from Japan and others, and I think you've noted those.

And then, of course, they've frequently said that they also need to "leapfrog" in certain capabilities, and that's where you might see a little bit more of their strategic planning. To be honest with you, I don't know that many programs that I could put in the leapfrog capability, but an ASBM, even if reactive, kind of fits into that capability or into that category and I think there are some other areas,

too--Fred mentioned the importance of the U.S. maintaining its technological edge in information and in information capabilities and operations--that's certainly an area that the Chinese, at least according to their writings, are very, very focused on.

In some cases, I believe that they probably are making more practical progress perhaps than we are, and we should be very much concerned about that. I think the assumption that we'll maintain a technological edge in perpetuity is a dangerous assumption. And I think that there are some areas where they are doing that. Whether that's applicable to a specific long-term strategic threat assessment they're making--not so sure about that, but it's still applicable.

VICE CHAIRMAN WORTZEL: Commissioner Fiedler.

COMMISSIONER FIEDLER: I'd like you to talk about how the Chinese operationalize their consideration of threats or the necessity to be players vis-a-vis both India and Japan?

We've been talking most of the day about the United States. You, of course, Mr. Cooper, in your port discussion reach into the Indian side of this, but I'd like to get a little deeper into it.

MR. COOPER: Okay. Again, I'll try to get a little bit deeper. That's the primary area that I would bring up that I believe indicates a desire on the part of China to expand their sphere of influence into what traditionally has been India's backyard and India's area of influence.

You know, reading from a number of sources, I believe that the Indians are very concerned about this. I think probably the best place to get some additional information on this is to read about Chinese relationships with Sri Lanka recently, and I think I mentioned in my longer testimony the great increase in Chinese funding into Sri Lanka and their support for port construction there. You know, many analysts, from what I've read, believe that it was a great turning point in the ability of the Sri Lankans to address the Tamil Tigers and to defeat them. So again that's a very good example of where the Chinese have reached well into India's sphere of influence and really had an impact.

For Japan, I think it's, you know, again it's a little bit different because of the--

COMMISSIONER FIEDLER: The U.S. relationship.

MR. COOPER: --importance of the economic relationship there.

COMMISSIONER FIEDLER: Yes.

MR. COOPER: It's very different from their approach to India.

MR. VELLUCCI: Yes, to that I would just add that prior to the recent Qingdao naval review, Wu Shengli gave a number--the Commander of the PLA Navy gave a number of interviews with newspapers, and he stated that the PLA Navy is not just concerned

with the--I'm not sure if he used superpower or if he named the United States, but stated that China is also concerned with a number of developing countries who are modernizing their navy in the region, and to that we can only assume here for--

COMMISSIONER FIEDLER: India.

MR. VELLUCCI: --India, as well as a couple of Southeast Asian nations. So, India, you don't see it, depending on how far back you go, it's more of a recent concern with the Indian Navy, but Japan has always been there. Certainly since 1993, under China's national military strategy, the eastern seaboard has been their primary concern because of Taiwan, and if you're planning to deal with a contingency involving the United States' Navy, then Japan just kind of falls under that umbrella.

COMMISSIONER FIEDLER: All right. Thank you.

VICE CHAIRMAN WORTZEL: Gentlemen, I want to thank you on behalf of my fellow commissioners for being here, for taking the time to put this testimony together and deliver it and answering the questions. You've been a great panel.

We're going to take a five minute break before we start the next panel.

[Whereupon, a short recess was taken.]

PANEL IV: TECHNICAL DEVELOPMENTS OF THE PLA NAVY

VICE CHAIRMAN WORTZEL: Ladies and gentlemen, this is the final actual panel of the day. You've heard a great deal about broad strategy, historical development, operational missions. Well, the fact is you can't do any of those things if you don't have the technology, the radar systems, the missiles, to take care of things, to do that, of this Navy. And this panel will look at the technical developments of the PLA Navy.

We've got two excellent people to do it. Our first speaker will be Mr. Ronald O'Rourke who is a Naval Affairs Specialist with the Congressional Research Service.

Mr. O'Rourke has worked since 1984 as a Naval Analyst for the CRS at the Library of Congress. He regularly briefs members of Congress and congressional staff members and has testified before congressional committees on Chinese Navy issues on several occasions.

In 1996, Mr. O'Rourke received a Distinguished Service Award from the Library of Congress for his service to Congress on naval issues.

Second speaker will be Mr. Richard Fisher, Jr., who is the Senior

Fellow on Asian Military Affairs at the International Assessment and Strategy Center.

Mr. Fisher is a Senior Fellow there on Military Affairs and a recognized authority on Chinese military developments, particularly with respect to incorporating technology and the Asian military balance and their implications for the United States.

Mr. Fisher has worked on Asian security matters for 20 years in a range of positions. He's testified before the Senate Foreign Relations Committee, the House International Relations Committee, the House Armed Services Committee, and our own Commission on the modernization of the Chinese military.

So, gentlemen, just to remind you, please try and keep your oral testimony to seven minutes. There's a little clock up there that lets you know where you are, and then I assure you there will be plenty of time to amplify that with questions from the other commissioners.

I'll now turn it over to Mr. O'Rourke. Thank you very much.

**STATEMENT OF MR. RONALD O'ROURKE
SPECIALIST IN NAVAL AFFAIRS, CONGRESSIONAL
RESEARCH SERVICE, WASHINGTON, DC**

MR. O'ROURKE: Chairman Bartholomew, Vice Chairman Wortzel, and commissioners, thank you for the opportunity to appear today to discuss China's naval modernization effort and its implications for the U.S. Navy.

With your permission, I'd like to submit my prepared statement for the record and summarize it here with a few brief remarks.

My comments today are drawn from my CRS report on this topic. The report was initiated in November '05, and has been updated since then about 35 times, most recently on May 29.

The first point I want to make is that China's maritime military modernization effort is a broad-based effort that includes investments in a range of platforms and weapons, as well as reforms and improvements in areas such as logistics, doctrine, and personnel quality, education, and training.

My prepared statement details some of these developments. To cite just one example, China's recent rate of domestic submarine construction, if maintained in coming years, could eventually produce a force of 40 to 60 relatively modern domestically-produced submarines of all kinds, plus the 12 Kilos purchases from Russia plus any older submarines that are kept in service.

Other areas that are frequently discussed include surface combatants, amphibious ships, anti-ship ballistic missiles, anti-ship

cruise missiles, long-range surveillance and targeting systems, and an expected aircraft carrier construction program.

China's modernization effort has substantially improved China's maritime military capabilities since the early 1990s. At the same time, observers believe China's Navy continues to exhibit limitations or weaknesses in several areas such as joint operations and naval warfare areas such as anti-submarine warfare.

As many have pointed out, DoD and other observers believe that the near-term focus of China's military modernization effort has been to develop military options for addressing the situation with Taiwan. Consistent with this goal, observers believe China wants its military to be capable of acting as a regional anti-access force.

ASBMs, attack submarines, and supporting C4ISR systems are viewed as key elements of China's emerging maritime anti-access force, but other force elements are also of significance.

Beyond this near-term goal, DoD and other observers believe that additional goals of China's naval modernization effort include improving China's ability to do the following:

First, asserting or defending China's claims in maritime territorial disputes and China's interpretation of international laws relating to freedom of navigation in exclusive economic zones, an interpretation that is at odds with the U.S. interpretation;

Second, protecting China's sea lines of communications to the Persian Gulf; and

Third, asserting China's status as a major world power, encouraging other states in the region to align their policies with China, and displacing U.S. regional military influence.

These additional goals imply that if the situation with Taiwan were somehow resolved, China could find continuing reasons to pursue its naval modernization effort.

They also imply that if China completes its planned build-up of Taiwan-related naval force elements or if the situation with Taiwan were somehow resolved, the composition of China's naval modernization effort could shift to include a greater emphasis on naval force elements that would be appropriate for supporting these additional goals, such as aircraft carriers, a larger number of nuclear-powered attack submarines, serial production of destroyers, underway replenishment ships, and overseas bases and support facilities.

These additional goals also imply that even if China and the United States never come to blows with one another, maintaining a day-to-day presence in the Pacific of U.S. naval forces capable of successfully countering Chinese naval forces would be an important U.S. tool for shaping the political structure of the Pacific basin.

In the current debate over future U.S. defense spending, a key

question is how much emphasis to place on China as a defense planning priority.

This question is of particular importance to the U.S. Navy because many programs associated with countering improved Chinese military forces would fall within the Navy's budget. In terms of potential impact on programs and spending, the Navy might have more at stake on this issue than the Army and Marine Corps, and perhaps at least as much, if not more, than the Air Force.

In my formal written statement, I have presented some notional arguments in favor of placing either less emphasis or more emphasis on programs for countering improved Chinese military forces.

A decision to place a relatively strong defense planning emphasis on countering improved Chinese military forces could lead to one or more of the following:

First, increasing activities for monitoring and understanding developments in China's Navy as well as activities for measuring and better understanding operating conditions in the Western Pacific;

Second, assigning a larger percentage of the Navy to the Pacific Fleet;

Third, homeporting more of the Pacific Fleet's ships at forward locations such as Hawaii, Guam and Japan;

Fourth, increasing training and exercises in operations relating to countering Chinese maritime anti-access forces, such as antisubmarine warfare operations; and

Fifth, placing a relatively strong emphasis on programs for developing and procuring highly capable ships, aircraft and weapons for defeating Chinese anti-access systems.

The U.S. Navy has taken a number of steps in recent years that appear intended, at least in part, at improving the Navy's ability to counter improved Chinese maritime anti-access capabilities, including:

Increasing Pacific Fleet ASW training; assigning certain high capability Navy units to the Pacific Fleet; setting goals for having a certain share of the Navy's carrier and submarine forces in the Pacific; and announcing a significant change in its plans for destroyer procurement.

Going forward, issues to watch include: what the QDR says about China as a defense planning priority; decisions regarding the share of the fleet that is assigned to the Pacific; the number of ships that are forward-homeported in places such as Hawaii, Guam and Japan; and decisions on investments in Navy programs for high capability ships, aircraft and weapons.

Mr. Chairman, this completes my statement, and I would be happy to respond to any questions the Commission might have.

[The statement follows:]

**Prepared Statement of Mr. Ronald O'Rourke
Specialist in Naval Affairs, Congressional Research Service,
Washington, DC**

Chairman Bartholomew, Vice Chairman Wortzel, and Commissioners, thank you for the opportunity to appear today to discuss the implications of China's naval modernization effort for required U.S. Navy capabilities.

This testimony is drawn from the most recent (May 29, 2009) update to my Congressional Research Service (CRS) Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress*. This report was first published in November 2005 and has been updated more than 35 times since then. For convenience, this testimony uses the term China's naval modernization to refer to the modernization not only of China's navy, but also of Chinese military forces outside China's navy that can be used to counter U.S. naval forces operating in the Western Pacific, such as land-based anti-ship ballistic missiles (ASBMs).

Elements of China's Naval Modernization Effort

China's naval modernization effort encompasses a broad array of weapon acquisition programs, including programs for anti-ship ballistic missiles (ASBMs), anti-ship cruise missiles (ASCMs), land-attack cruise missiles (LACMs), surface-to-air missiles, mines, manned aircraft, unmanned aircraft, submarines, destroyers and frigates, patrol craft, amphibious ships and craft, mine countermeasures (MCM) ships, and supporting C4ISR systems. In addition, observers believe that China may soon begin an aircraft carrier construction program. China's naval modernization effort also includes reforms and improvements in maintenance and logistics, naval doctrine, personnel quality, education, and training, and exercises.

China's Naval Limitations and Weaknesses

Although China's naval modernization effort has substantially improved China's naval capabilities in recent years, observers believe China's navy continues to exhibit limitations or weaknesses in several areas, including capabilities for sustained operations by larger formations in distant waters, joint operations with other parts of China's military, C4ISR systems, anti-air warfare (AAW), antisubmarine warfare (ASW), MCM, and a dependence on foreign suppliers for certain key ship components.

Reasons for Modernization Effort

DOD and other observers believe that the near-term focus of China's military modernization effort, including its naval modernization effort, has been to develop military options for addressing the situation with Taiwan. Consistent with this goal, observers believe that China wants its military to be capable of acting as a so-called anti-access force – a force that can deter U.S. intervention in a conflict involving Taiwan, or failing that, delay the arrival or reduce the effectiveness of intervening U.S. naval and air forces. ASBMs, attack submarines, and supporting C4ISR systems are viewed as key elements of China's emerging anti-access force, though other force elements — such as ASCMs, LACMs (for attacking U.S. air bases and other facilities in the Western Pacific), and mines — are also of significance.

DOD and other observers believe that, in addition to the near-term focus on developing military options relating to Taiwan, additional goals of China's naval modernization effort include improving China's ability to do the following:

- ! assert or defend China's claims in maritime territorial disputes and China's interpretation of international laws relating freedom of navigation in exclusive economic zones (an interpretation at odds with the U.S. interpretation);
- ! protect China's sea lines of communications to the Persian Gulf, on which China relies for some of its energy imports; and
- ! assert China's status as a major world power, encourage other states in the region to align their policies with China, and displace U.S. regional military influence.

The three additional goals above are potentially significant for at least three reasons. First, they imply that if the situation with Taiwan were somehow resolved, China could find continuing reasons to pursue its naval modernization effort.

Second, they would imply that if China completes its planned buildup of Taiwan-related naval force elements, or if the situation with Taiwan were somehow resolved, the composition of China's naval modernization effort could shift to include a greater emphasis on naval force elements that would be appropriate for supporting these additional goals, such as aircraft carriers, a larger number of nuclear-powered attack submarines, serial production of destroyers, underway replenishment ships, and overseas bases or support facilities.

Third, these additional goals suggest that even if China's military were never to engage in combat with an opposing military, China's military forces, including in particular its naval forces, would still be used on a day-to-day basis to promote China's political position in the Pacific. This would create an essentially political (as opposed to combat-related) reason for the United States or other countries to maintain a competitive presence in the region with naval and other forces that are viewed by observers in the Pacific as capable of effectively countering China's forces.

Selected Elements of China's Naval Modernization

Anti-Ship Ballistic Missiles (ASBMs). China is deploying large numbers of theater-range ballistic missiles capable of attacking targets in Taiwan or other regional locations. Although ballistic missiles in the past have traditionally been used to attack fixed targets on land, DOD and other observers believe China is developing anti-ship ballistic missiles (ASBMs), which are ballistic missiles equipped with maneuverable reentry vehicles (MaRVs) capable of hitting moving ships at sea. Observers have expressed strong concern about this development, because such missiles, in combination with broad-area maritime surveillance and targeting systems, would permit China to attack aircraft carriers and other U.S. Navy ships operating in the Western Pacific. The U.S. Navy has not previously faced a threat from highly accurate ballistic missiles capable of hitting moving ships at sea. Due to their ability to change course, MaRVs would be more difficult to intercept than non-maneuvering ballistic missile reentry vehicles.

Submarines. China's submarine modernization effort, which is producing a significantly more modern and capable submarine force, has attracted substantial attention and concern. China by the end of 2006 completed taking delivery on eight Russian-made Kilo-class non-nuclear-powered attack submarines (SSs) that are in addition to four Kilos that China purchased from Russia in the 1990s. China also has recently built or is building four other classes of submarines, including the following:

- ! a new nuclear-powered ballistic missile submarine (SSBN) design called the Jin class or Type 094;
- ! a new nuclear powered attack submarine (SSN) design called the Shang class or Type

093;

- ! a new SS design called the Yuan class or Type 041 (or Type 039A); and
- ! another (and also fairly new) SS design called the Song class or Type 039/039G.

Along with the Kilo-class boats, these four classes of indigenous submarines are regarded as much more modern and capable than China's aging older-generation submarines. At least some of these new submarine designs are believed to have benefitted from Russian submarine technology and design know-how. China was projected to have a total of 28 relatively modern attack submarines — meaning Shang, Kilo, Yuan, and Song class boats — in commission by the end of 2007. Much of the growth in this figure occurred in 2004-2006.

Between 1995 and 2007, China placed into service a total of 38 submarines of all kinds, or an average of about 2.9 submarines per year. This average commissioning rate, if sustained indefinitely, would eventually result in a steady-state submarine force of 58 to 88 boats of all kinds, assuming an average submarine life of 20 to 30 years.

Excluding the 12 Kilo-class boats purchased from Russia, total number of domestically produced submarines placed into service between 1995 and 2007 is 26, or an average of 2.0 per year. This average rate of domestic production, if sustained indefinitely, would eventually result in a steady-state force of domestically produced submarines of 40 to 60 boats of all kinds, again assuming an average submarine life of 20 to 30 years.

Only three of the submarines placed into service between 1995 and 2007 are nuclear powered. If the mix of China's submarine-production effort shifts at some point to include a greater proportion of nuclear-powered boats, it is possible that the greater resources required to produce nuclear-powered boats might result in a reduction in the overall submarine production rate. If so, and if such a reduced overall rate were sustained indefinitely, it would eventually result in a smaller steady-state submarine force of all kinds than the figures calculated in the preceding two paragraphs.

China's submarines are armed with one or more of the following: ASCMs, wire-guided and wake-homing torpedoes, and mines. China's eight recently delivered Kilos are reportedly armed with the highly capable SS-N-27 Sizzler ASCM. In addition to other weapons, Shang-class SSNs may carry LACMs. Although ASCMs are often highlighted as sources of concern, wake-homing torpedoes can also be very difficult for surface ships to counter.

Each Jin-class SSBN is expected to be armed with 12 JL-2 nuclear-armed submarine-launched ballistic missiles (SLBMs). DOD estimates that these missiles will enter service in 2009 or 2010, and that they will have a range of 7,200 kilometers (about 3,888 nautical miles). Such a range could permit Jin-class SSBNs to attack:

- ! targets in Alaska (except the Alaskan panhandle) from protected bastions close to China;
- ! targets in Hawaii (as well as targets in Alaska, except the Alaskan panhandle) from locations south of Japan;
- ! targets in the western half of the 48 contiguous states (as well as Hawaii and Alaska) from mid-ocean locations west of Hawaii; and

! targets in all 50 states from mid-ocean locations west of Hawaii.

Aircraft Carriers. After years of debate and speculation on the issue, observers now believe that China may soon begin an aircraft carrier construction program. Observers believe that China may complete the unfinished ex-Russian carrier Varyag, which China purchased in 1998, and place it into service in the near future, possibly as an aviation training ship. Observers also believe that China may build one to six new carriers in coming years. Chinese officials have begun to talk openly about the possibility of China operating aircraft carriers in the future.

Observers have speculated on the potential size and capabilities of new-construction Chinese aircraft carriers. Given the technical challenges involved in building and operating carriers, China might elect to begin by building conventionally powered carriers of perhaps 40,000 to 70,000 tons displacement, and then progress to construction of larger and possibly nuclear-powered ships. The Varyag has an estimated full load displacement of about 58,500 tons.

Although aircraft carriers might have some value for China in Taiwan-related conflict scenarios, they are not considered critical for Chinese operations in such scenarios, because Taiwan is within range of land-based Chinese aircraft. Consequently, most observers believe that China would build and operate carriers primarily because of their value in other kinds of operations that are more distant from China's shores. Chinese aircraft carriers could be used for power-projection operations, particularly in scenarios that do not involve opposing U.S. forces. Chinese aircraft carriers could also be used for humanitarian assistance and disaster relief (HA/DR) operations, maritime security operations (such as anti-piracy operations), and non-combatant evacuation operations (NEOs). Politically, aircraft carriers could be particularly valuable to China for projecting an image of China as a major world power, because aircraft carriers are viewed by many as symbols of major world power status. In a combat situation involving opposing U.S. naval and air forces, Chinese aircraft carriers would be highly vulnerable to attack by U.S. ships and aircraft, but conducting such attacks could divert U.S. ships and aircraft from performing other missions in a conflict situation with China.

Surface Combatants. China since the early 1990s has purchased four Sovremenny-class destroyers from Russia and deployed nine new classes of indigenously built destroyers and frigates (some of which are variations of one another) that demonstrate a significant modernization of China's surface combatant technology. China to date has commissioned only 1 or 2 ships in each of its five new destroyer classes, suggesting that at least some of these classes might have been intended to serve as stepping stones in a plan to modernize the China's surface combatant technology incrementally before committing to larger-scale series production of destroyers. If one or more of these destroyer designs (or a successor design) are put into larger-scale production, it would accelerate the modernization of China's surface combatant force. Unlike the new destroyer designs, some of the four new frigate designs have been put into larger-scale series production. China has also deployed in significant numbers a new kind of missile-armed fast attack craft that uses a stealthy catamaran hull design.

Amphibious Ships. China has built the lead ship of a new class of amphibious ships called the Yuzhao or Type 071 class. The design has an estimated displacement of 17,600 tons. Some observers believe that China might build a total of four to six Type 071 ships. China reportedly might also begin building a larger amphibious ship, called the Type 081 LHD, that might displace about 20,000 tons. Some observers believe China may build a total of three or more Type 081s. Although larger amphibious ships such as the Type 071 and the Type 081 might have some value for conducting amphibious landings in Taiwan-related conflict scenarios, some observers believe that China would build and operate such ships more for their value in conducting other kinds of operations that are more distant from China's shores. Larger amphibious ships can be used for conducting not only amphibious landings, but for HA/DR operations, maritime security operations (such as anti-piracy operations), and NEOs.

Maritime Surveillance and Targeting Systems. China reportedly is developing or deploying maritime surveillance and targeting systems that can detect U.S. ships and submarines and provide targeting information for Chinese ASBMs and other Chinese military units. These systems reportedly include land-based over-the-horizon backscatter (OTH-B) radars, land-based over-the-horizon surface wave (OTH-SW) radars, electro-optical satellites, radar satellites, and seabed sonar networks.

Operations Away From Home Waters. Chinese navy ships in recent years have begun to conduct operations away from China's home waters. Although many of these operations have been for making diplomatic port calls, some of them have been for other purposes, including, for example, anti-piracy operations near Somalia.

Comparing U.S. and Chinese Naval Capabilities

U.S. and Chinese naval capabilities are sometimes compared by showing comparative numbers of U.S. and Chinese ships. Although numbers of ships can be relatively easy to compile from published reference sources, comparisons of such figures are highly problematic as a means of assessing relative U.S. and Chinese naval capabilities, for the following reasons:

- ! A fleet's total number of ships (or its aggregate tonnage) is only a partial metric of its capability. Other important factors contributing to a navy's capability include types of ships; types and numbers of aircraft; the sophistication of sensors, weapons, C4ISR systems, and networking capabilities; supporting maintenance and logistics capabilities; doctrine and tactics; the quality, education, and training of personnel; and the realism and complexity of exercises. Given these other significant contributors to naval capability, navies with similar numbers of ships or similar aggregate tonnages can have significantly different capabilities, and navy-to-navy comparisons of numbers of ships or aggregate tonnages can provide a highly inaccurate sense of their relative capabilities.
- ! Total numbers of ships of a given type (such as submarines, destroyers, or frigates) can obscure potentially significant differences in the capabilities of those ships, both between navies and within one country's navy. Differences in capabilities of ships of a given type can arise from differences in factors such as sensors, weapons, C4ISR systems, networking capabilities, stealth features, damage-control features, cruising range, maximum speed, and reliability and maintainability (which can affect the amount of time the ship is available for operation). The potential for obscuring differences in the capabilities of ships of a given type is particularly significant in assessing relative U.S. and Chinese capabilities, in part because China's navy includes significant numbers of older, obsolescent ships. Figures on total numbers of Chinese submarines, destroyers, and frigates lump older, obsolescent ships together with more modern and more capable designs.
- ! A focus on total ship numbers reinforces the notion increases in total numbers necessarily translate into increases in aggregate capability, and that decreases in total numbers necessarily translate into decreases in aggregate capability. For a Navy like China's, which is modernizing in some ship categories by replacing larger numbers of older, obsolescent ships with smaller numbers of more modern and more capable ships, this is not necessarily the case. China's submarine force, for example, has decreased in total numbers, but has increased in aggregate capability, because larger numbers of older, obsolescent boats have been replaced by smaller numbers of more modern and

more capable boats. For assessing navies like China's, it can be more useful to track the growth in numbers of more modern and more capable units.

- ! Comparisons of numbers of ships (or aggregate tonnages) do not take into account maritime-relevant capabilities that countries might have outside their navies, such as land-land-based anti-ship ballistic missiles (ASBMs), land-based anti-ship cruise missiles (ASCMs), and land-based air force aircraft armed with ASCMs. This is a particularly important consideration in comparing U.S. and Chinese military capabilities for influencing events in the Western Pacific.
- ! The missions to be performed by one country's navy can differ greatly from the missions to be performed by another country's navy. Consequently, navies are better measured against their respective missions than against one another. This is another significant consideration in assessing U.S. and Chinese naval capabilities, because the missions of the two navies are quite different.

China as a Defense-Planning Priority in the QDR

In the debate over future U.S. defense spending, including deliberations taking place in the current Quadrennial Defense Review (QDR), a key issue is how much emphasis to place on programs for countering improved Chinese military forces in coming years. The question of how much emphasis to place in U.S. defense planning on programs for countering improved Chinese military forces is of particular importance to the U.S. Navy, because many programs associated with countering improved Chinese military forces would fall within the Navy's budget. In terms of potential impact on programs and spending, the Navy might have more at stake on this issue than the Army and Marine Corps, and perhaps at least as much, if not more, than the Air Force.

Statements from Secretary of Defense Robert Gates and other DOD officials suggest that the QDR may place a relatively strong emphasis on programs for supporting current combat operations in Iraq and Afghanistan, as well as programs for conducting irregular warfare (e.g., counterinsurgency operations) in coming years, and relatively less emphasis on programs relating to possible conventional conflicts between states. This has suggested to some supporters that the QDR may place relatively less emphasis on, among other things, programs for countering improved Chinese military forces in coming years.

Those who argue that relatively less emphasis should be placed on programs for countering improved Chinese military forces in coming years could argue one or more of the following:

- ! Preparing for a potential conflict over Taiwan years from now might be unnecessary, since the situation with Taiwan might well be resolved by then.
- ! It is highly unlikely that China and the United States will come to blows in coming years over some other issue, due to the deep economic and financial ties between China and the United States and the tremendous damage such a conflict could inflict.
- ! Placing a strong emphasis on programs for countering improved Chinese military forces could induce China to increase planned investments in its own naval forces, leading to an expensive U.S.-China naval arms race.
- ! Far from coming to blows, Chinese and U.S. naval forces in coming years can and should cooperate in areas of common interest such as HA/DR operations, anti-piracy operations, and other maritime-security operations.

Those who argue that relatively more emphasis should be placed on programs for countering improved Chinese military forces in coming years could argue one or more of the following:

- ! Not preparing for a potential conflict over Taiwan years from now could make such a conflict more likely by emboldening China to use military force to attempt to achieve its goals regarding Taiwan. It might also embolden China to use its naval forces more aggressively in asserting its maritime territorial claims and its interpretation of international laws relating freedom of navigation in exclusive economic zones (an interpretation at odds with the U.S. interpretation).
- ! China's naval modernization effort may be driven more by internal Chinese factors than by external factors such as U.S. decisions on defense spending. To the extent that China's naval modernization effort might be influenced by U.S. decisions on defense spending, a decision to not emphasize programs for countering improved Chinese military forces might encourage China to continue or even increase its naval modernization effort out of a belief that the effort is succeeding in terms of dissuading U.S. leaders from taking steps to prevent a shift in China's favor in the balance of military forces in the Western Pacific.
- ! Even if China and the United States never come to blows with one another, maintaining a day-to-day presence in the Pacific of U.S. naval forces capable of successfully countering Chinese naval forces will be an important U.S. tool for shaping the region—that is, for ensuring that other countries in the region do not view China as the region's emerging military leader (or the United States as a fading military power in the region), and respond by either aligning their policies more closely with China or taking steps to improve their own military capabilities that the United State might prefer they not take, such as developing nuclear weapons.
- ! Placing a relatively strong emphasis on programs for countering improved Chinese military forces does not preclude cooperating with China in areas such as HA/DR operations, anti-piracy operations, and other maritime-security operations.

Potential Navy-Related Program Implications

Potential Implications in General. A decision to place a relatively strong defense-planning emphasis on countering improved Chinese military forces in coming years could lead to one more of the following:

- ! increasing activities for monitoring and understanding developments in China's navy, as well as activities for measuring and better understanding operating conditions in the Western Pacific;
- ! assigning a larger percentage of the Navy to the Pacific Fleet (and, as a result, a smaller percentage to the Atlantic Fleet);
- ! homeporting more of the Pacific Fleet's ships at forward locations such as Hawaii, Guam, and Japan;
- ! increasing training and exercises in operations relating to countering Chinese maritime anti-access forces, such as antisubmarine warfare (ASW) operations;

- ! placing a relatively strong emphasis on programs for developing and procuring highly capable ships, aircraft, and weapons for defeating Chinese anti-access systems.

Actions Already Taken. The U.S. Navy and (for sea-based ballistic missile defense programs) the Missile Defense Agency (MDA) have taken a number of steps in recent years that appear intended, at least in part, at improving the U.S. Navy's ability to counter Chinese maritime anti-access capabilities, including but not limited to the following:

- ! increasing antisubmarine warfare (ASW) training for Pacific Fleet forces;
- ! shifting three Pacific Fleet Los Angeles (SSN-688) class SSNs to Guam;
- ! basing all three Seawolf (SSN-21) class submarines — the Navy's largest and most heavily armed SSNs — in the Pacific Fleet (at Kitsap-Bremerton, WA);
- ! basing two of the Navy's four converted Trident cruise missile/special operations forces submarines (SSGNs) in the Pacific (at Bangor, WA);
- ! assigning most of the Navy's ballistic missile defense (BMD)-capable Aegis cruisers and destroyers to the Pacific - and homeporting some of those ships at Yokosuka, Japan, and Pearl Harbor, HI;
- ! increasing the planned procurement quantity of SM-3 BMD interceptor missiles;
- ! developing and procuring a sea-based terminal-defense BMD capability as a complement to the Aegis BMD midcourse BMD capability; and
- ! expanding the planned number of BMD-capable ships from three Aegis cruisers and 15 Aegis destroyers to more than three Aegis cruisers and all Aegis destroyers.

In addition, the Navy's July 2008 proposal to stop procurement of Zumwalt (DDG-1000) class destroyers and resume procurement of Arleigh Burke (DDG-51) class Aegis destroyers can be viewed as having been prompted in large part by Navy concerns over its ability to counter China's maritime anti-access capabilities. The Navy stated that this proposal was driven by a change over the last two years in the Navy's assessment of threats that U.S. Navy forces will face in coming years from ASCMs, ballistic missiles, and submarines operating in blue waters. Although the Navy in making this proposal did not highlight China by name, the Navy's references to ballistic missiles and to submarines operating in blue waters can be viewed, at least in part, as a reference to Chinese ballistic missiles (including ASBMs) and Chinese submarines. (In discussing ASCMs, the Navy cited a general proliferation of ASCMs to various actors, including the Hezbollah organization.)

Highly Capable Ships and Aircraft. An emphasis on acquiring highly capable ships could involve maintaining or increasing funding for procurement of aircraft carriers, attack submarines, and cruisers and destroyers. Capabilities to emphasize in procurement of cruisers and destroyers would include BMD, AAW, and ASW. An emphasis on procuring highly capable aircraft could involve maintaining or increasing funding for a variety of naval aviation acquisition programs, including F/A-18E/F Super Hornet and F-35C strike fighters, EA-18G Growler electronic attack aircraft, E-2D Hawkeye early warning and command and control aircraft, the P-8A Multi-mission Maritime Aircraft (MMA), and the Navy's Unmanned Combat Air System (UCAS program) program.

Pacific Fleet's Share of the Navy. The final report on the 2005 Quadrennial Defense Review (QDR)

directed the Navy "to adjust its force posture and basing to provide at least six operationally available and sustainable carriers and 60% of its submarines in the Pacific to support engagement, presence and deterrence." The Navy will meet the 2005 QDR directive of having six CVNs in the Pacific when the Carl Vinson (CVN-70) — the CVN currently undergoing a mid-life refueling complex overhaul (RCOH) at Newport News, VA — completes its RCOH and post-delivery work and is then shifted to San Diego.

As of February 2009, 52% or 53% of the Navy's submarines (depending on whether SSBNs are included in the calculation) were homeported in the Pacific. The Navy can achieve the 2005 QDR directive of having 60% of its submarines in the Pacific by assigning newly commissioned submarines to the Pacific, by moving submarines from the Atlantic to the Pacific, by decommissioning Atlantic Fleet submarines, or through some combination of these actions. According to one 2008 press report, the Navy plans to have 60% of its SSNs in the Pacific Fleet by 2010. As part of a "strategic laydown analysis" that the Navy performed in support of its January 2009 proposal to transfer a nuclear-powered aircraft carrier (CVN) to Mayport, FL, the Navy projected that of its planned 313-ship fleet, 181 ships, or 58% (including six of 11 CVNs), would be assigned to the Pacific Fleet.

Homeporting Pacific Fleet Ships in Forward Locations. Navy ships homeported in Japan include an aircraft carrier strike group consisting of a CVN and 11 cruisers, destroyers, and frigates; an amphibious ready group consisting of three amphibious ships; and additional mine countermeasures ships. Navy ships homeported at Guam include three Los Angeles (SSN-688) class attack submarines and a submarine tender. Navy ships homeported in Hawaii include 15 Virginia (SSN-774) and Los Angeles class SSNs, and 11 cruisers, destroyers, and frigates. A 2002 Congressional Budget Office (CBO) report discussed the option of homeporting as many as 11 SSNs at Guam.

Fleet Architecture -- Larger vs. Smaller Ships. Some observers, viewing the anti-access aspects of China's naval modernization effort, including ASBMs, ASCMs, and other anti-ship weapons, have raised the question of whether the U.S. Navy should respond by shifting over time to a more highly distributed fleet architecture featuring a reduced reliance on carriers and other large ships and an increased reliance on smaller ships. The question of whether the U.S. Navy concentrates too much of its combat capability in a relatively small number of high-value units, and whether it should shift over time to a more highly distributed fleet architecture, has been debated at various times over the years, in various contexts. Much of the discussion concerns whether the Navy should start procuring smaller aircraft carriers as complements or replacements for its current large aircraft carriers.

Chairman Bartholomew, distinguished members of the commission, this concludes my testimony. Thank you again for the opportunity to appear before you to discuss these issues. I will be pleased to respond to any questions you might have.

VICE CHAIRMAN WORTZEL: Thank you.
Mr. Fisher.

**STATEMENT OF MR. RICHARD D. FISHER, JR.
SENIOR FELLOW, INTERNATIONAL ASSESSMENT AND
STRATEGY CENTER, ALEXANDRIA, VIRGINIA**

MR. FISHER: Commissioners, thank you very much for this chance once again to appear before this esteemed Commission.

I believe that this Commission plays a very vital role in our debate about China. Democracies are only as strong as the debate that

they can tolerate, but that debate is in turn dependent upon the facts that can be brought to bear to any specific issue.

We are very challenged in terms of bringing facts and good information to our debate about the PLA; its modernization trends; the challenges it may pose in the future.

I would ask that any effort that could be made to increase the amount of information that can be made public from the Pentagon or other organizations would be of great help. I, like so many other of my colleagues, spend a great deal of time trying to find and parse a great amount of open sources.

I have specialized for the last 15 years or so in tracking the hardware side of PLA modernization, and my research in this regard has taken me around the world to try to interact with those who are selling things to China and on occasion to interact with Chinese who are building their future weapon systems.

I've recently authored a book that tries to make sense of a large collection of open source data, and I would offer the conclusion that China is modernizing and expanding the PLA Navy in part as a part of a much larger PLA modernization design to fulfill two broad goals.

The first goal is to increase the PLA's ability to deny access to potential adversaries that may try to enter the Western Pacific, and eventually to extend control over those areas. At the same time, the systems that are being developed and produced for these missions are helping to assist a second longer-range goal, and that is to build a military capable of global power projection.

Today, we're examining the PLA Navy and its build-up and modernization, but this is taking place at the same time the PLA is developing military space power, fifth generation combat airpower, large transport aircraft for military-civilian purposes, and rapidly deployable mechanized army forces.

If these investments in military power continue, if the Communist Party and its PLA coalition partner are able to remain in power--big if's--it's my assessment that by the 2020s, that the PLA will have an ability to project both maritime and mechanized army power globally, and may be able to conduct wide ranging military missions in outerspace.

Now, I've listed in my testimony some of the challenges and dangers to the United States from these developments and suggested some pretty narrow hardware, made some hardware suggestions for the United States at the conclusion of my paper, so I'd really like to focus the remainder of my few minutes on what I see are the specific PLA Navy modernization trends.

This really began to take off in the 1980s when Deng Xiaoping placed a new priority on high-technology basic research. Many of the

PLA weapons that we're beginning to see today stem from this period, and much more will be coming.

The PLA Navy was not given a high priority during the 1990s, but that has changed significantly during this current decade.

For example, there has been an accelerated investment in new shipyards from 2007 onward. A brand new large shipyard was created in Dalian where the Varyag, acquired from the Ukraine in 2002, was just moved at the end of April. There's a second new large shipyard at Changxing Island in Shanghai that could also build aircraft carrier-size ships.

The PLA has also constructed new bases, especially the large base in Sanya.

My written testimony mentions the PLA's space-missile combine, and how this has produced new weapons, such as satellites which are going to enable far-flung projections and the anti-ship ballistic missiles that have already been well-discussed today.

In the future, we'll see much greater investment in unmanned systems, aerial and underwater.

Submarines have been modernizing very quickly, moving toward a force, as Ron suggested, that could approach 60 non-nuclear submarines. This would be in itself three times the current Japanese inventory or twice the Korean-Japanese inventory combined.

China is researching at least three kinds of air independent propulsion systems for non-nuclear submarines. The future number of PLAN SSBNs and SSNs are an interrelated issue, depending upon the SSBNs that are produced. Five or six have been suggested by U.S. and Chinese sources. That and the number of aircraft carriers that China eventually produces will have a great impact on the number of SSNs that eventually are produced. I think the eventual number could be anywhere between ten and 20.

Aircraft carriers are, in my opinion, a great area of investment. The PLA has been working on this since at least 1970 according to former PLA commander Liu Huaqing, and the revelations in the Hong Kong and Japanese press in January 2009 indicating the PLA may build two non-nuclear and two nuclear carriers by the 2020s, are suggestions I think we should take seriously, and China is already investing heavily in their future air wing. at the PLA is considering Russian fighters for their carriers, as they develop indigenous carrier fighters, as well as the support aircraft to go with that.

It is also important to monitor China's growing investment in their amphibious projection fleet.

Their first LPD was launched at the end of 2006 after just six months of construction. According to some Asian sources, the PLA may plan to build up to six LHDs, helicopter carriers for marine

projection, and possibly three LPDs. Such a fleet would give the PLA Navy the ability to project several thousand troops plus their armor and equipment, and specialized amphibious armor and equipment are also receiving great investment.

Frigates and destroyers have truly improved over the last decade and will get better in the future. Future generation warships may include weapons such as rail guns, laser weapons, systems that the US Navy hopes to deploy by the end of the next decade.

Small combatants. I'd like to say more about that, but my time is running out.

Auxiliaries. Supply ship, logistic supply ships. The PLA Navy has not built many of those, but in 2002 to 2003 built in rapid succession two very capable logistic support ships demonstrating that it has the capability to expand this portion of this fleet rapidly as well.

PLA naval air forces have received some significant modernization. In addition, the PLA Navy's coastal defense forces have recently received new long-range cruise missiles, indicating that there is a potential that they will also receive anti-ship ballistic missiles as will the Second Artillery.

And I think I've exceeded my time limit, but thank you very much.

[The statement follows:]

**Prepared statement of Richard Fisher
Chinese Naval System Modernization Trends**

Richard D. Fisher, Jr.

Senior Fellow, International Assessment and Strategy Center

Testimony before the U.S. –China Economic and Security Review Commission,

“The Implications of China’s Naval Modernization for the United States,”

June 11, 2009

Introduction

Recent statements by paramount leader Hu Jintao and others indicate that China is now signaling its political intent, and indeed is beginning to assemble the naval forces, to begin to defend China’s wide ranging interests further abroad. However, China does not provide for its citizens or for foreign parties, a clear explanation of its evolving maritime interests, naval doctrines and naval equipment modernization programs. Repeated calls for greater military transparency are largely ignored because the ruling Communist Party shares China’s historical aversion to such, and it does not have to provide expansive details of the doctrine, strategies or hardware modernization objectives of the People’s Liberation Army Navy (PLAN) to an adversarial legislature or press. The United States government offers frequent assessments of China’s naval developments, but there is a

sense that politics and a desire to protect sources inhibits the disclosure of more details to the public. In addition, analysts can also base their assessments on a large body of opaque literature from China, which includes official statements, strategy or hardware oriented academic and popular journals, plus interviews with Chinese officials or their military-commercial partners.

Another set of indicators are the ships and weapons the PLAN has or may purchase in the future. Despite their often classified nature, the examination naval weapon systems to some extent can provide more tangible indicators of potential trends in capabilities. It is also often the case that data is more easily obtained on foreign weapon systems sold to the PLAN, as well as on Chinese naval systems China wishes to sell. But it is important to stress that open sources often can only offer a limited basis upon which to derive conclusions about the People's Liberation Army.

That said, based on a long review of many of these opens sources¹¹ it is this analyst's conclusion that China is currently modernizing and expanding the PLAN to fulfill two broad goals. Initially China seeks to assemble new naval capabilities to contribute to new joint force capabilities which can first deny access to opposing naval forces to the Western Pacific, and then to exercise increasing military control over those regions to advance China's political-military objectives. This goal will be tied to development of China's naval nuclear missile forces. Second, China is now starting to build modern naval systems capable of increasingly global nuclear and non-nuclear power projection. The PLAN could have the wherewithal to begin to achieve the first goal by the middle of the next decade, and be well on its way to achieving the second by the middle of the 2020s.

China's reaching this level of maritime capability is dependent upon many factors, not the least of which is the survival of the Communist Party-People's Liberation Army ruling coalition and the continuation of their national and budgetary priorities of military expansion. Nevertheless, the modernization and buildup of the PLAN is taking place today simultaneously with a broader Chinese military modernization that encompasses PLA investments in military-space power, 5th generation combat airpower, large aircraft and rapidly deployable mechanized army forces. If these investments continue and produce increasingly modern and capable PLA forces, it is not inconceivable that the PLA of the 2020s will have a broad global military projection capability.

By this period the PLAN may not be as large as the U.S. Navy, but it may possess a competitive array of high-technology capabilities, and be able to raise the costs to U.S. actions in ways that could result in damage to U.S. security interests and diminish

¹¹ This testimony benefits from the author's review of these open sources on China's naval modernization trends as presented in his recent book, *China's Military Modernization, Building for Regional and Global Reach*, Westport: Praeger Security International, 2008, Chapters Five, Six and Seven. The section on aircraft carrier developments draws from the author's "China's Carrier Progress," *Jane's Intelligence Review*, (forthcoming).

Washington's ability to exercise international leadership. Absent an appropriate level of U.S. investment in its naval combat capabilities, and the strengthening of its Asian alliances and allied military capabilities, by the 2020s the PLA may be able to exercise increasing control over the Western Pacific. A brief list of possible dangers would include:

--Heightened threats to forward deployed U.S. carrier groups from an array of PLA anti-access forces, undermining a key pillar of the U.S. conventional deterrent in Asia, thus challenging the viability of U.S.-led alliance and defense networks.

--An increasing likelihood that forward deployed Chinese naval forces will be on hand to help U.S. forces, or to thwart U.S. influence over distant future crises that affect U.S. interests.

--China's increasing use of both naval and air-based power projection to foster new military coalitions that could exclude or diminish U.S. influence in regions of importance to China.

--A growing Chinese ability to reduce technology gaps, especially in terms of space systems, sensors, missiles, anti-missiles, energy-based weapons, combat aircraft and unmanned surveillance and combat systems.

--Additional challenges from China's increasing sale of advanced naval technologies to rogue states that may join China in seeking to undermine U.S. influence and interests.

But well before these dangers are realized, U.S. friends and allies may be forced to seek independent deterrent capabilities, raising the specter of arms races. By the 2020s, the U.S. may find itself competing or cooperating with China militarily far beyond the Asian region.

What follows is a brief review of China's naval hardware modernization trends.

Basis for Recent Naval Modernization

The most recent period of PLA modernization very likely began shortly after the 1989 Tiananmen Massacre, when the Chinese Communist Party leadership reversed the formerly low priority given to military modernization, in order to better defend the Party from perceived heightened internal and external threats. While former paramount leader Deng Xiaoping had hoped to delay such rearmament, he did initiate the critical 1986 "863 Program" for high-tech military research and development, which has profoundly affected China's current military-technical progress. Many of the information, space, missile and energy-based weapon programs now benefitting PLAN modernization started with the 863 Program.

However, PLAN modernization received greater attention under the leadership of General/Admiral Liu Huaqing, a former PLAN commander whose high-tech savvy impressed Deng enough to elevate Liu to the critical Principal Vice Chairman of the PLA's Central Military Commission (CMC) between 1992 and 1997. Liu accelerated the PLA's acquisition of many foreign naval systems like the *Kilo* conventional submarines and *Sovremenniy* class destroyers from Russia, and then the purchase of components and weapons technology that later emerged in the Type 052B and Type 052C air defense destroyers. Liu likely also played a major role in the acquisition of the uncompleted Russian carrier *Varyag* from the Ukraine, acquired in 2002, and was a major advocate for the current aircraft carrier program. The 2002 to 2004 launchings of China's two second generation Type 093 nuclear attack submarine (SSN) and the first second generation Type 094 nuclear ballistic missile submarine (SSBN) was also likely possible due to Liu's leadership.

During the period of the 10th and 11th Five Year Plans (2001-2010) the People's Liberation Army has demonstrated an increased ability to develop, build and sustain an increasing array of modern naval vessels armed with increasingly capable weapon systems. Foreign technology has still been critical during this period, from the modernization of China's shipyards during the 1990s following access to Japanese and South Korean shipbuilding technology, to the ability to develop more modern warships based on purchased or co-developed Russian weapon systems.

A testament to the capability of China's shipyards is that the first 20,000 ton Type 071 LPD was built in about six months in 2006. In 2005 the China State Shipbuilding Corporation started construction of a new Jiangnan Shipyard on Changxing Island near Shanghai. When additional facilities are complete in about 2015 the Changxing complex may become the world's largest shipyard. It now has a new drydock that measures 580m x 120m, and this yard is now able to start building carriers and other combat ships larger than the *Varyag*. According to Google Earth and DigitalGlobe satellite imagery obtained by the *Jane's Information Group*, the Dalian shipyard and drydock to which the *Varyag* moved on or about 25 April 2009, did not exist at all in 2007.¹² The movement of the *Varyag* to this yard for eventual completion may also mean that is carrier may serve as a template to assist the construction of a reported two similar follow-on carriers.

The PLAN's phased warship development was illustrated by the 2002-2004 construction of two air defense destroyers based on the same hull: the Type 052B which used largely purchased Russian weapons and systems, and then the Type 052C which uses a new phased array radar co-developed with Ukrainian help, and a surface-to-air missile (SAM) based on Russian technology. A second co-developed SAM equips the new Type 054A frigate. These new destroyers and frigates use new stealth shaping and feature new-generation electronic and Type 730 close-in-weapon system (CIWS) anti-missile systems. China's heavy investment in new aircraft turbofan engines is expected to result in early spin-offs of new marine gas turbine engines, to allow China to supplement

¹² See "China forges ahead with new carrier," *Jane's Intelligence Weekly*, June 3, 2009, p. 10

turbines now purchased from the Ukraine. This decade has also seen the PLAN transition from the 1980s-level Type 093 *Song* non-nuclear submarine (SSK) design to the more advanced *Yuan* class, with rumors that a succeeding SSK design is in development. While less is known about SSN development, a hiatus since 2003 in the production of Type 093 SSNs may indicate that an improved or successor class is under development.

In addition the PLA is investing heavily in new basing and naval logistic support capacities. In 2004 a PLA source confirmed to the author a previous report that China was at the time building up to five new naval bases and facilities. The most noteworthy has been a new large base near the resort city of Sanya on Hainan Island. This base features a prominent underground facility for submarines. In early 2008 *Jane's* was able to use DigitalGlobe imagery to identify progress on the main opening of this facility and to identify other access points. This base also features new large docks and a new loading pier capable of handling aircraft carrier size ships.¹³ The construction of this base follows China's effort since the 1970s to assert control over the South China Sea by building military bases and outposts in the Paracel and Spratly Island groups. Also significant is China's building maritime relationships with Burma, Bangladesh, Sri Lanka, Pakistan and Iran. These most often involve the construction of new modern port facilities and/or the sale of modern naval warship technology.

Future issues: In the next decade it is likely that China will prove the capacity to develop and build world-class warships, and will strive to sell them to friendly states. China is now completing two major large modern shipyards that will be capable of the modular construction of warships as large as aircraft carriers. The new Jiangnan Changxing yard in Shanghai and the new Dalian yard are just now able to start large carrier-size warship construction, as well as large amphibious assault ships and large logistic support ships. The PLAN is now developing either improved models of the Type 093 and Type 094 nuclear submarines, or successor classes. The PLAN will also develop more capable destroyers, frigates, small combatants, and make increasing use of innovative hull forms like the wave piercing catamaran. After their extensive development, in the next decade new surface warships can be expected to incorporate better supersonic anti-ship missiles, to perhaps include versions of the new anti-ship ballistic missile (ASBM) and new energy based weapons like railguns and lasers.

The PLAN's buildup at Sanya may soon lead to a greater effort by the PLA to militarily exploit its outposts in the Paracel and Spratly Islands, perhaps to sustain seabed and radar sensors to help create a "bastion" for the safe operation of new SSBNs. This would likely increase China's sensitivity over this region and perhaps lead to stronger efforts to exclude foreign naval forces from the critical sea lanes of the South China Sea. In addition, China's visible investment in new major port facilities in the Indian Ocean point

¹³ See author, "Secret Sanya—China's new nuclear naval base revealed," *Jane's Intelligence Review*, May 2008.

to the likelihood that these states will increasingly grant access to the PLAN, as part of bi-lateral or multi-lateral military endeavors, perhaps under the aegis of the Shanghai Cooperation Organization. This will increase China's ability to affect critical sea lanes to the Persian Gulf and create increasing concern for India and for Asian states dependent upon Persian Gulf energy.

Information-Space-Missiles

Like the other PLA services the PLAN is moving to exploit a range of new information technologies, a doctrinal goal known as *informatization* in the PLA. Digital communication and training, as in the other PLA services, has enabled the PLAN to better implement new joint-service doctrines and to better join new joint service region and theater command structures. Modern warships like the Type 052B and Type 039 submarines feature high levels of computerized automated controls to allow reductions in crew size. New computerized ship and submarine simulators also allow for greater training efficiencies. The PLAN even uses online connections to facilitate professional military education to its far-flung small island outposts in the disputed South China Sea.

In the last two years it has become apparent that the PLAN has increased its regional intelligence awareness by introducing new radar and undersea sensors. At the recent February 2009 IDEX arms show a Russian source confirmed the author's suspicion that Russia had sold long-range Over-the-Horizon radar systems to China, that had first been noted by an Asian military source to the author in 2007. Asian source also indicate that the PLAN has made some use of sea-bed sensors to monitor submarine and warship activity around Taiwan.

While the PLA considers whether it will form a new unique service to control space systems and space operations, it is likely that the PLAN will benefit and contribute to space operations as do other PLA services. The General Armaments Department of the CMC currently controls the PLA's growing constellation of optical and radar imagery, navigation, weather, communication, data-relay, electronic intelligence, and perhaps soon, deep space infrared early warning satellites. But all of these satellites will increasingly enable the PLAN to accomplish regional and extra-regional missions. Iridium satellite telephones are used by Maritime Militia to coordinate military operations by fishing ships.

Joint service coordination and space information systems are also allowing the PLAN to benefit from a novel naval weapon, the anti-ship ballistic missile (ASBM), and future cruise missiles and advanced SAMs. It is likely that the Second Artillery now controls emerging ASBMs, but when used in conjunction with the GAD's satellites they offer a potential revolutionary weapon, which poses a new threat to large U.S. Navy ships like aircraft carriers and critical air defense destroyers. A recent report from the National Air and Space Intelligence Center (NASIC) indicates that the initial DF-21 (CSS-5) based

ASBM may have a range of 900+ miles (2,340+km).¹⁴ But Asian military sources have indicated to the author that a new 3,000km range variant of the DF-21 may also have an anti-ship capability.

Space systems will also enable the PLAN to use longer range cruise missiles and new SAMs. While the PLAN uses a version of the 180km range YJ-82 anti-ship cruise missile from Type 039 SSKs, it can be expected to use sub-launched versions of the 500km-1,000km range YJ-62 and the smaller C-705 (YJ-75?), which is similar in size to the Russian Novator Club. The PLAN has purchased the Russian Altair Company's *Fort* SAM, the naval version of the Almaz-Antey S-300, which has a limited anti-tactical ballistic missile (ATBM) capability. The HHQ-9 missile that equips the new Type 052C destroyer may be the analogue to the ground-based FD-2000 SAM, which a Chinese source at the 2009 IDEX arms show told the author has been tested in an ATBM capacity.

Future issues: It can be expected that the PLAN will make greater use of radar, undersea and space information systems. The PLAN can be expected to make greater use of seabed sensors to protect its future SSBN operating areas in the South China Sea and in areas around Taiwan and the East China Sea to counter U.S. and Japanese surface and submarine warships. It should be considered that the PLAN will benefit increasingly from PLA future developments in information, space and missile technology, and contribute to them as well. Some PLA academic literature suggests that PLAN SSBNs could become platforms for satellite launch and for direct ascent anti-satellite missile launches. China's significant investment in micro and nano satellites is also suited to enabling naval space operations.¹⁵ It also has to be considered that the PLAN will eventually put smaller ASBMs on submarines and surface ships, as they can be cued and guided by the same satellite networks that enable cruise missiles and aircraft to accomplish their missions.

The next decade could also see the PLAN's rapid utilization of new long and short range unmanned aerial vehicles (UAVs) and unmanned underwater vehicles (UUVs) for surveillance and communication missions. The Chengdu Aircraft Corporation is developing a large UAV similar to the Northrop-Grumman *Global Hawk* while other Chinese companies are developing shorter range helicopter UAVs which could be used by large and small PLAN warships.¹⁶ Since the mid-1990s China has also been developing autonomous UUVs, initially with Russian help.

¹⁴ National Air and Space Intelligence Center, *Ballistic and Cruise Missile Threat*, NASIC-1031-0985-09, p. 17.

¹⁵ For a recent review of China's microsatellite efforts see the author's "China's Growing Microsatellite Prowess," for the Institute of Defense Studies and Analysis in New Delhi (forthcoming).

¹⁶ For a review of the PLA's UAV sector and recent UAV developments see the author's "Maritime Employment of PLA Unmanned Aerial Vehicles," for the U.S. Naval War College (forthcoming).

Imagery, navigation, communication, data relay satellites and UAVs will eventually allow initial PLAN power projection missions, and may facilitate more capable naval anti-missile capabilities. Early power projection missions may take the form of global cruise missile strikes from SSNs, but later from larger aircraft carrier and amphibious formations. In the last two years the PLAN has launched two new large Space Events ships, part of a fleet of about seven such ships, which have assisted PLA-managed satellite and all of China's manned space missions. These ships could also contribute to tracking and even actual attack activities for space combat missions. China's longstanding interest in missile defenses, its demonstrated ASAT capability, plus comments by Asian sources, point to a possible PLA ABM capability in the early 2020s. It should be considered that the PLAN will naval versions of some of these systems to allow advanced ABM capabilities to be deployed on surface ships and perhaps submarines.

Submarines

The PLAN's traditional emphasis on submarines stems from early People's War doctrines that stressed coastal defense and sea denial to counter sea-borne invasion. PLAN non-nuclear submarines are expected to comprise about 50-60 modern to still-useful non-nuclear submarines (SSKs) by the middle of the next decade. The PLAN is expected to retain for some time most of the 19 or so Type 035 *Ming* class SSKs built mainly during the early 1990s, for secondary decoy, mining and Special Forces transport missions. But the 1990s saw a greatly increased investment by the PLA in both non-nuclear and nuclear powered submarines.

To achieve a rapid technology upgrade the PLAN has turned to Russia, for new non-nuclear submarines and technology, and technology for nuclear submarines. But Israel and perhaps others have provided submarine technology. However, the PLA has also made considerable strides in developing acoustic signature reduction technologies like advanced skewed propellers, engine isolation systems and anechoic hull coverings. In addition, academic technical literature suggests the PLA has been developing multiple air independent propulsion (AIP) systems to include Sterling engines, fuel cells (with German inputs) and close cycle diesel engines similar to the French MESMA. These hold the potential for increasing submerged periods from one to two weeks, greatly increasing the tactical utility of SSKs.

To accelerate its modernization, in 1993 the PLAN ordered two Russian Project 877EMK *Kilo* class submarines, and two more advanced Project 636 *Kilos*. When the U.S. announced its intention in early 2001 to sell eight new SSKs to Taiwan, the PLAN responded in early 2002 by ordering eight more advanced Project 636M subs, armed with the Novator Club system of anti-ship, land-attack and anti-submarine cruise missiles. The anti-ship and land attack variants have a 200+km range, and the unique 3M54 variant uses a supersonic second stage to defeat CIWS defenses. Whereas Taipei and Washington have yet to begin construction of the first new SSK for Taiwan, the PLAN's

eight new 636M *Kilos* were delivered by 2006. The PLAN's 12 *Kilos*, deployed to the East Sea and South Sea Fleets, now constitute a formidable, quiet, survivable (twin-hull construction) and well armed open-ocean capable SSK force.

After solving some developmental challenges by the late 1990s, by 2004 the PLAN had launched 13 of its Type 039 *Song* SSKs, similar in size and configuration to the 1980s level French *Agosta* SSK. The Type 039 marks a generational advance over the Type 035 by its greater use of digital ship control and combat systems, and its far better sonar, weapons, and acoustic levels. While perhaps not quite as good as the *Kilo*, in late 2006 a *Song* SSK was now famously able to sneak up on the U.S.S. Kitty Hawk during an exercise near Japan. While reports contended the U.S. Navy was not watching for PLAN submarines, it is also well known that for decades, lesser capable but still quiet and well-captained SSKs have been able to penetrate U.S. carrier group defenses, highlighting a growing threat from PLAN SSKs.

Then in 2004 the PLAN reportedly caught U.S. intelligence services by surprise with the launch of the first *Yuan* (possibly Type 041) class SSK. So far about four have been launched, though the 2009 Department of Defense PLA report estimates up to 15 will be built. This SSK shows a dimensional similarity to the *Kilo* but differs in the placement of its forward hull horizontal fins. The *Yuan* may also incorporate double-hull construction and may be the first PLAN SSK class to use an AIP system. It features a cleaner hull form than the *Song*, and may also have better sonar and combat systems. There are also unconfirmed rumors that the PLAN has developed an additional SSK class which shows some similarity to the German Type 212 SSK class.

SSNs: The PLAN is expected to operate the three first generation Type 091 *Han* class that were updated between 1998 and 2002, perhaps increasingly for secondary and training missions. The 2002 launch of the first Type 093 *Shang* followed nearly a decade of great effort, followed by a second in 2003. There is some unconfirmed reporting that four more have been launched, for a total of six. Should such reports be false, then the production hiatus may be explained by preparations for a successor class, usually referred to as the Type 095. Chinese source images of the Type 093 indicate that it is a measured development the first generation 091, with a more hydrodynamic hull form, though the presence of air vents may generate some noise. Earlier estimates by the U.S. Office of Naval Intelligence compared the performance of the Type 093 to the late Soviet era Russian *Victor-III* SSN. If true, this would constitute a steep advance for PLAN SSNs, bringing them to a level comparable to early U.S. *Los Angeles* class SSNs, but not as capable of the latest U.S., Russian and British SSN. This potential gap in performance may help explain a possible low production for the Type 093. The ultimate number of SSNs the PLA plans to build is not known, but might be determined by the size of the PLAN's SSBN and carrier forces.

SSBNs: In 2004 the PLAN launched its first Type 094 *Jin* class second generation SSBN. The 094's development extends back to the 1960s and several Chinese internet

images show that it not a radical departure from the design of the solitary Type 091 *Xia* first generation SSBN. It is reasonable to expect it features improved sonar, combat and quieting systems. In 2007 the Department of Defense PLA report estimated the PLA would build up to five 094s, though Chinese sources sometimes note the total number may be six—the PLA has not disclosed its planned construction. Again, the hiatus in SSBN production may indicate the PLA is developing an improved version. Chinese internet commentary sometimes raises the possibility that future versions may have 16 submarine launched ballistic missiles (SLBMs) vice the current 12.

While the first Type 094 may not be operational until 2010, the expected service entry of the second generation JL-2 SLBM, it has been deployed to its likely new base near Sanya, including one 2008 visit to this base by PLA and Communist Party leader Hu Jintao. Some Asian sources have commented that the JL-2 has yet to overcome some developmental issues, but Chinese CCTV television coverage in late April 2009 indicated the JL-2 was “cold launched” from a Type 094 in 2005.

China’s possible adoption of a “bastion” strategy for its new SSBNs may depend in part on success in extending the range of the JL-2. The U.S. intelligence community reports a current range of 7,200+km. From Hainan this is enough to reach Moscow and Canberra, but the 094 would have launch near Shanghai in order to reach Anchorage, Alaska. Chinese internet commentary sometimes mentions the possibility of a future 12,000km range JL-2, which would be sufficient to reach Seattle and Los Angeles from just east of Hainan Island, or Chicago if launched near Shanghai. NASIC has reported that the JL-2 may currently be armed with a single warhead, though Asian military sources have noted to the author that it may eventually carry 3 to 4 warheads. The 2005 “cold launch” image of the JL-2 shows that it has a blunt nosecone shape, which would be consistent with multiple warhead carriage.

Future issues: If current estimates hold, the PLAN could have about twice the number of SSKs as are in both the South Korean and Japanese navies, or over three times that in the Japanese or the Australian Navy. The high likelihood that later *Yuan* or successor classes of SSKs will feature an AIP system points to an increased ability of PLAN SSKs to conduct offensive as well as defensive missions in higher threat environments. A very quiet AIP powered SSK will also pose an increased risk to U.S. and Russian SSNs.

The future number of PLAN SSNs and SSBNs is a critical issue as it may affect other aspects of fleet size and the degree of aggressiveness that China may show in asserting control over some disputed maritime territories. Based on available open sources this analyst estimates tentatively that the PLA may be seeking a rough division in the number of long range nuclear missiles that it assigns to the Second Artillery and to the PLAN. If one assumes that a notional size for a land-based ICBM type will be about “20,” and that Type 094s will continue to have 12-16 SLBMs, that points to a potential early nuclear missile force increase to about 60-70+ missile each for ICBMs and SLBMs.

Should this estimate prove plausible, it would then follow that the PLAN would seek to justify greater resources and political considerations in order to protect the critical SSBNs. This would be increasingly necessary if the Type 094 suffers from an acoustic disadvantage compared to U.S., Indian and Russian SSNs. As such it is possible that the PLAN would seek to be able to deploy multiple SSN escorts for its SSBNs, and there may be a considerable difference in consideration between 5 and 6 SSBNs, as it has been suggested that the 6 SSBNs may enable simultaneous patrols by two SSBNs. The latter might serve to justify a new minimum force of 12 SSNs, though carrier battle group escort missions might increase this number from to between 15 and 20.

If the U.S. decides to pursue PLAN SSBNs with missiles targeted against the United States, as the U.S. Navy did versus Soviet SSBNs during the Cold War, then China may react by seeking to increase the capability and number of its SSNs to an even greater level. This would spur a new undersea technology competition, especially if China also responded by starting to pursue U.S. SSBNs.

Aircraft Carriers

In late April 2009 the incomplete former Soviet/Ukrainian aircraft carrier *Varyag* made its first voyage in Chinese waters. From its berth in Dalian harbor, where the PLA has kept it since 2002, the *Varyag* moved about two miles to a drydock in a nearly complete new large ship construction facility that did not exist in 2007. This new shipyard, and the *Varyag*'s placement in it, demonstrates that China is now mobilizing resources to fulfill its longstanding ambition to build an aircraft carrier navy.

Long a matter of debate, at times complicated by Chinese disinformation, doubts about China's ambition to build a carrier navy have been laid to rest by series of public and semi-public Chinese disclosures. In mid-November 2008 Major General Qian Lihua, Director of the Foreign Affairs Office of the Chinese Ministry of Defense, told the *Financial Times*, "The navy of any great power...has the dream to have one or more aircraft carriers..." From late December 2008 through January 2009 Chinese military and shipyard sources made a rare series of press leaks to Japan's *Asahi Shimbun* and Hong Kong's *South China Morning Post*, previewing plans to build up to four new aircraft carriers by 2020. The first two would be 50,000 to 65,000 ton conventionally powered carriers similar to the *Varyag*, while the later two would be nuclear powered and similar to the uncompleted Soviet carrier *Ulyanovsk*. Then at the early March 2009 National People's Congress session, PLA Navy (PLAN) East Sea Fleet Commander Admiral Xu Hongmeng stated, "China really needs a carrier. Both technologically and economically, China already has the capacity to build a carrier...China will very soon have its own aircraft carrier." Then in late March 2009 Defense Minister General Liang Guanglie told visiting Japanese Defense Minister Hamada Yasukazu, "We need to develop an aircraft carrier."

Provided requisite funding and political support continue, the PLA will have to simultaneously advance at least four interrelated tasks to realize its carrier ambition.

First the PLA will have to assemble the necessary design, construction, logistic support and combat support capabilities to sustain a carrier navy. Second, it will have to refurbish the Varyag to mission capable status and commence construction of indigenously designed carriers. Then it will have to expand the PLA Navy Air Force to include a range of carrier-capable aircraft for training, combat and combat support missions. Fourth, the PLA will have to train requisite personnel for their carriers and air wings.

In his 2004 memoirs Liu Huaqing (now 92) noted that he began investigating the construction of aircraft carriers for China in 1970. But he was not able to place a top priority on carriers, and as noted in his memoirs, instead pursued an intensive intelligence gathering campaign. This included the purchase of retired carriers from Australia, Russia, and a reported attempt to purchase the *Clemenceau* from France, culminating in the 1998 purchase of the Varyag for \$20 million. Scores of PLA personnel have visited U.S., Russian, British, French and Brazilian carriers, to even include interrogating docents on the *U.S.S. Midway* carrier museum in San Diego. There has been extensive PLA contact with Russian carrier related companies, who stand to play a significant role in China's carrier development.

Starting in the 10th Five Year Plan of 2001-2005, the PLA started in earnest to build the infrastructure to support a future carrier fleet, as well as start to build the first generation of large warships which could serve as future carrier escorts. In early 2001 an Asian military source told Jane's that the PLA had started building a major new naval base on Hainan Island. Starting in 2002 the PLAN launched two Type 093 second-generation nuclear attack submarines, plus two Type 052B and two Type 052C air defense destroyers, which could serve as initial carrier battle group escorts.

China's carriers: Soon after the Varyag arrived at its new location it is increasingly apparent that this ship has entered a new more active phase in its eventual refurbishment as China's first aircraft carrier. DigitalGlobe images obtained by *Jane's* show the *Varyag* is now surrounded by four large construction cranes and Internet-source imagery shows that three new material and personnel elevators have been built around the carrier. The normally 58,500 ton (full load) *Varyag* was reported to be about 70 percent complete when it arrived in Dalian, and much speculation has centered on the condition of its steam-turbine engines. A possible end-goal for the *Varyag* or perhaps a PLA version of this design was potentially revealed by the Harbin Institute of Technology, a major PLA research subcontractor, when students and faculty built a large scale model of this ship for the university's 50th anniversary in 2003. This model showed a near copy of the *Varyag* equipped with at least 48 HQ-9 SAM launchers, 24 YJ-62 size cruise missiles, two Type 730 CIWS systems, all mounted the ship's periphery, and a phased array radar system—the same weapons and systems that equip the new Type 052C *Luyang II* destroyer. The possible lack of deck-hull mounted vertical launch anti-ship cruise missiles on a PLAN version of the *Varyag* may mean it can carry more than the usual 18 Sukhoi Su-33 size fighters.

Less is known about the PLA's nuclear-powered aircraft carrier plans, save that reports in January noted it would be larger, displacing as much as 65,000 tons. China has no previous experience with nuclear powered surface ships. However, inasmuch as Russia has announced the intention to build three to four new nuclear powered 50,000 to 60,000 ton aircraft carriers, it is possible that Russia stands to make a substantial contribution to China's nuclear carrier plans. Reports that China has acquired plans for the 80,000 ton Project 1143.7 (Ulyanovsk) class nuclear powered carrier are another indicator that China may seek Russian assistance.

Carrier Air Wing: Since 2005 Russian industry sources have told the author of China's interest in acquiring an initial group of Sukhoi Su-33 jet fighters for carrier operations. Since then negotiations between the PLA and Russia have waxed and waned, with reports ranging from China insisting on acquiring a small number that would not justify reviving production, to China's interest in purchasing up to 100 new Su-33s upgraded with more powerful radar, engines and weapons. Russian reluctance to sell the Su-33 is prompted by its concerns over China's Shenyang Aircraft Corporation having copied previously co-produced models of the Su-27SK/J-11, to include the new J-11B with Chinese radar and avionics, and soon engines, and the twin-seat J-11BS. In the late 1990s China also acquired an early T-10K/Su-33 prototype from the Ukraine, fueling speculation that China is developing its own carrier capable J-11, despite doubts that it can master the complex modifications necessary for carrier operations. More recently Chinese sources indicate that Shenyang may be developing a separate twin-engine 4th generation combat aircraft called the J-13 or J-15, which may be closer in size to the Boeing F/A-18C and slated for early development into a carrier capable version.

Should the PLA opt for upgraded Su-33s, they would quickly obtain a carrier combat aircraft that would have greater unrefueled range, greater maneuverability and options for longer range weapons than possessed by the current U.S. Navy Boeing F/A-18E/F fighter. During the recent April 2009 60th Anniversary celebration of the PLA Navy, Commander Wu Shengli publically called for the development of a "supersonic cruise" capable fighter for the PLAN, an indication of interest in 5th generation fighters that could eventually equip Chinese aircraft carriers. Both the Shenyang and Chengdu Aircraft Corporations are known to be developing 5th generation fighters. They may also be developing lightweight 5th generation fighters, inasmuch as a Chinese source disclosed to the author in 2005 that Chengdu was considering the development of a Lockheed-Martin F-35 class 5th generation fighter. The PLA has had a longstanding interest in acquiring vertical take-off fighters, having considered the British *Harrier* and the Russian Yakovlev Yak-141 at different times.

The PLA is also known to be developing carrier combat support aircraft, that initially could focus on airborne early warning (AEW) and anti-submarine versions of the Changhe Z-8 helicopter. A 2005 Chinese magazine photo of politician visiting an unknown design bureau revealed a possible model of an AWACs aircraft similar in size

to the U.S. Navy E-1 Tracer. More recently China's Northwestern University, another major center for PLA-funded aerospace research, conducted wind tunnel analysis of the twin-engine Sukhoi Su-80 cargo/passenger aircraft with saucer-shaped and "rail" shaped radar arrays. All of these designs could be configured for anti-submarine or cargo missions. In addition, the PLA can be expected to modify future unmanned combat and support aircraft for carrier operation. Shenyang's *Warrior Eagle* UCAV concept revealed at the 2008 Zhuhai Airshow could form the basis for a future carrier-based UCAV similar in size to the Northrop-Grumman X-47B.

Less is known about the PLA's personnel and training programs to sustain its carrier fleet. The *Varyag*, once it enters service, possibly between 2012 and 2015, will serve initially as a platform for training and doctrine development. The PLANAF's existing regiment of Su-30MK2 fighters could also provide experienced pilots carrier training. Recent reports indicate that the PLAN may have access to the Saki carrier training facility at Saki in the Ukraine, and may pursue a training relationship with Brazil, who's *Sao Paulo* is the former French carrier *Foch*.

Future issues: If early 2009 reports from Chinese sources prove correct the PLAN would have a four-carrier force by the 2020s. Two smaller "Varyag" size carriers might prove best suited for regional and pro-SSBN missions, while the two larger nuclear powered carriers would be available for global political image projection or military projection missions. Again, provided the PLA retains its political power into the coming decades, a number of variables, ranging from a precipitous decline of U.S. global leadership to the emergence of hostile relationships with Russia, India, Japan or other powerful neighbors, could lead the PLA to build a larger number of carriers. It is likely that China's future 5th generation combat aircraft will have carrier capable variants. The potential emergence of a 5th generation short take-off and vertical landing (STOVL) 5th generation fighter could also lead the PLA to consider smaller pro-SSBN carriers or enable larger landing helicopter dock (LHD) amphibious assault ships that could fulfill secondary SSBN support missions.

Growing Amphibious Capabilities

The PLA has long maintained a capability for short-range amphibious projection, with the PLA Army providing the majority of amphibious equipped and trained divisions, and the nominally PLAN-controlled PLA Marines fielding two brigades. Having long used former U.S. World War 2 landing ship tanks (LSTs), the PLA began designing its own LSTs in the 1970s, maintaining a small force of 17-20 until earlier this decade, when these were effectively doubled by the construction of 10 *Yuting-II* and 10 *Yubei* class LSTs between 2003 and 2005. PLAN LSTs are credited with a capacity of either 10 tanks or about 250 troops. In addition the PLAN maintains a much larger number of smaller LSM and LCU size amphibious transports. Recent reports indicating PLA interest in the large Russian *Zubr* assault hovercraft have yet to lead to a sale.

In 2006 the Taiwan Ministry of Defense estimated that the PLA could also mobilize 800 “civilian” ships to assist an invasion. China has about 150 or so fast ferries that could carry 100-500 troops each. The PLA could also mobilize fishing ships, regular ferries and Roll-on/Roll-off (Ro-Ro) cargo ships to pour troops, armor and material into captured ports. However, the use of such a “Dunkirk” collection of an invasion force would require substantial surprise plus flawless planning and weather, difficult variables on the Taiwan Strait.

Starting in the 10th Five Year Plan it is apparent that the PLA commenced the building of larger amphibious assault ships capable of distant projection missions. This represents a stark change from previous PLAN practice and even exceeds the Soviet experience, whose largest *Rogov* class amphibious assault ship was intended for tactical operations, not strategic. During the later six months of 2006 the PLA built and launched its first 20,000ton Type 071 landing platform dock (LPD). With an estimated capacity for about 800 troops the Type 071 has a helicopter landing deck that can accommodate two Z-8 size assault helicopters. In 2005 there were reports that the PLAN was interested in purchasing Russian Kamov Ka-29 specialized naval assault helicopters, but such has not happened. The PLAN can be expected to eventually place versions of the Z-10 or lighter Z-11 attack helicopters on its larger amphibious assault ships. The Type 071 also has a well deck designed to carry the new *Yuyi* class hovercraft, similar to but smaller than the U.S. Landing Craft-Air Cushion (LCAC). This will allow the deployment of heavy armor and equipment from beyond the horizon.

In 2007 a Chinese source at the Singapore IMDEX naval show confirmed to the author that China was developing the Type 081 landing helicopter dock (LHD). Subsequent Chinese-source concept illustrations indicate this 20,000 ton ship differs from the Type 071 by having a full length aircraft deck and provision for SAMs and a phased-array radar. Some sources report that the PLA intends eventually to build a force of 6 Type 081s and 3 Type 071s. If realized, this would enable the PLA to mount an amphibious projection force of several thousand troops plus their associated armor and equipment, as far as logistic support ships or port access would allow.

In addition the PLA has invested considerable effort to develop new and more effective amphibious assault equipment and armor. The PLA has developed its version of the “Funnies,” specialized beach assault equipment which the Allies perfected during World War 2, to include mine-clearing rockets and trucks that lay aprons to assist trucks getting over beaches. In the late 1990s the PLA revealed that it had developed the Type-63C amphibious tank, equipped with a Russian-designed 105mm gun-launched anti-tank missile that out-ranges Taiwan’s 105mm tank guns. These are now being supplemented by a new family of amphibious assault vehicles that began appearing in 2005. The ZBD2000 utilizes a powerful pumpjet and a planning hull to achieve high speeds over water, and has a version armed with a 105mm gun, an infantry fighter vehicle version with a 30mm cannon, plus command and logistic support variants. This new assault vehicle family is now entering PLA Army and Marine units. It has succeeded in part due

to its smaller size, compared to the the similar but larger and troubled/over budget U.S. Marines Expeditionary Fighting Vehicle (EFV), which has recently had its planned procurement halved and is in danger of cancellation altogether.

Future issues: The Type 071 and 081 represent the PLA's first generation of large amphibious projection ships. It is reasonable to expect that the PLA may develop larger successors to both classes nearer to the 2020s. The PLA would have more cause to develop larger LHDs if the Chengdu Co. were to develop a short take-off vertical landing (STOVL) capable 5th generation fighter. The PLA's apparent success in developing a family of fast planning amphibious assault vehicles serves to enable PLAN amphibious ships to strike from beyond the horizon, the long objective of the U.S. Marines. It is just as possible that in the future U.S. Marines will be cooperating with their PLA counterparts in distant humanitarian or other missions, as it is also possible that the U.S. Navy and the PLAN could race to dominate a distant critical beachhead. In the near future, if a U.S. Navy and PLAN LPD arrived simultaneously at the same assault point, it is possible that the PLAN would succeed first in placing dominant armored forces ashore.

Destroyers and Frigates

Modern PLAN surface warships are quickly emerging to fulfill air defense, escort, and perhaps in the future, anti-missile and anti-submarine missions. The PLAN is slowly retiring its long-serving *Luda* class destroyers, of which 17 built during the 1970s and 1980s. About 14 remain in service, equipped mainly with anti-ship missile and gun armament, intended mainly to extend further out to sea previous PLAN doctrines of sea denial. As it acquired four Russian-built 1980s technology *Sovremenniy* class destroyers, from 2000 to 2006, the PLAN was developing three new classes of air defense destroyers that used purchased and co-developed sensor and weapon systems. Starting in 2003 the PLAN launched its new stealthy Type 054 *Jiankai* frigate, and a second class of stealthy frigate is expected before the end of the decade.

It appears that in building two ships each of three classes of air defense destroyers, filling a long-standing gap in capability, among the PLAN's possible goals were to build different capability levels and to test different technologies and weapon-sensor combinations. The Type 051C, based on the transitional Type 051 *Luhai* class hull, features the high performance Russian *Fort* vertical-launched SAM system, which could deal with some tactical ballistic missile threats and high-speed cruise missiles. Then the Type 052B *Luyang I* featured the medium range Russian Shtil rail-launched SAM, and medium-range ASMs, perhaps also offering a more cost effective design. The Type 052C *Luyang II* was more ambitious, featuring an Aegis-like phased array radar and the HHQ-9 vertical-launched SAM co-developed with Russia's Almaz-Antey SAM company. This SAM may have some ATBM capability, a feature that the PLAN will likely further develop for future destroyers.

The next class of PLAN destroyer is the subject of constant speculation by Chinese military magazines and websites, but there is little indication from open sources what capabilities it will stress. A recent issue of *Shipborne Weapons*, which seems to specialize in such speculation, posited a future PLAN destroyer class that apparently utilizes a smaller more capable version of the phased array radar of the Type 052C, and the new vertical launched SAM that equips the new Type 054A *Jiankai II* frigate. It would appear to be quite similar to the later versions of the U.S. *Burke* class air defense destroyer. It also features a larger bow sonar dome, indicating it may have a much improved anti-submarine capability. Such a ship would appear to be designed for carrier escort missions among others, but again, this is just speculation from one popular Chinese military magazine.

The PLAN frigate force now includes over 25 1970s vintage Jianghu class ships and 14 Jiangwei I and Jiangwei 2 ships, built from the late 1980s up until 2004. Both classes are ill equipped for modern naval warfare but could help enforce blockades if covered by land-based airpower. Some Jiangweis have been seen undergoing refurbishment while some Jianghu's have been converted to carry 122mm multiple artillery rocket systems to perform amphibious fire support missions. The 2003 arrival of the Type 054 signaled the PLAN's intention not to ignore this warship class. Having a similar stealthy shape to Taiwan/French *LaFayette* class frigate, the Type 054 and especially the later Type 054A with a new vertical launched SAM, they are a more capable though less expensive compliment to the PLAN's new destroyers. The PLAN is expected to build up to 12 Type 054A frigates. In 2007 a European source told the author that Germany's MTU maritime engine concern had won the competition to provide co-produced diesel engines for the next class of PLAN frigate, also expected to number 12 when completed.

Future issues: The PLAN follows closely global naval development trends and Chinese academic and popular military literature reflects an interest in how foreign navies are applying new technologies to produce more combat and cost effective solutions to naval challenges. It should be expected that future PLAN warships will make greater use of stealth, advanced electronics, automation to reduce crew size and Chinese-developed gas turbine engines. Future PLAN warships could also feature much longer range SAMs, new supersonic anti-ship and land-attack missiles, new laser or railgun weapons, and make greater use of UAVs and UUVs.

Small Combatants

In the 1960s and 1970s the PLAN build hundreds of fast attack craft (FAC) based on Soviet Komar and Osa class FACs armed with HY-1 copies of the Soviet Styx early anti-ship missile. Tied to coastal defense "People's War" doctrines these FACs were intended to operate in large numbers in conjunction with mines, submarines and air forces to thwart invasion from the sea. The decline of this threat from the 1980s onward also saw a decline in PLAN FAC numbers.

However, the PLAN has revived interest in this class of warship during the 10th and 11th five year plan. In 2004 the PLAN launched its first Type 022 stealthy wave-piercing catamaran FAC and in early 2009 *Jane's Fighting Ships* estimated that about 60 had been built, out of a potential requirement for 100. Based on a fast-ferry design developed by the Australian AMD Corporation, the 220 ton Type 022's wave-piercing catamaran configuration gives it a high 36 kt speed and offers such smaller ships better sea keeping ability in higher sea states. The Type 022 also uses stealth shaping, stealth coatings and disruptive camouflage to reduce its radar and optical signature. It is armed with up to eight YJ-82 anti-ship cruise missiles though it only has very light defensive armament consisting of one 25mm gun turret and MANPADS. This means that Type 022s can be used to add scores of ASMs to surface action groups for operations within the First Island Chain. In November 2007 Type 022s did join a surface action group consisting of larger destroyers and frigates for naval exercises in the South China Sea. However, the large missile bays could be configured for other types of missile ordinance, such as 300mm artillery rockets to assist amphibious operations. With adequate external cuing the Type 022 could also carry longer range land attack cruise missiles.

Future issues: Of some importance the Type 022 points the possibility of the PLAN building larger wave-piercing catamaran ships for more diverse missions. Starting in 2005 China has built a rescue ship and a fast ferry using a wave piercing catamaran hull, both roughly in the 300-400 ton range. The first fast ferry may have been launched on June 2, 2009. It appears to be able to carry 200-300 passengers. This is not as large as the 950 ton Joint High Speed Surface Vessel (JHSV) wave-piercing catamaran to be built for the U.S. Navy, but it does indicate the PLA could opt to build larger similar warships to enable high speed troop and material movement for amphibious operations. In early 2008 the popular Chinese military magazine *Shipborne Weapons* printed a speculative article exploring future versions of the Type 022, to include a larger "corvette" version which could carry unmanned helicopters or small manned helicopters, to perhaps serve as a command ship.

Auxiliaries

A rapid buildup of logistic supply and other auxiliary support ships would be a key indicator of the PLA's intension to assemble a navy increasingly capable of regional and extra-regional power projection. But so far into this decade, it would appear that the PLAN is not yet ready for a significant expansion of its logistic support fleet, though it has demonstrated a clear capability to do so should it make that decision. From 2002 to 2003 the PLAN built two 23,000 ton *Fuchi* class modern underway replenishment ships (AORs). Based on an earlier design produced for Thailand, the *Fuchi* is a modern AOR capable of underway transfer of fuel and solid stores. These ships have supported PLAN naval diplomatic deployments to Europe and Asia, and also supported the first anti-piracy deployment in December 2008. Prior to this the PLAN built two 21,000 ton *Fuqing* class underway replenishment ships in the 1970s, and acquired the Ukraine-built 37,000 ton *Nanyun* underway refueling tanker in 1993.

Smaller versions of the *Fuchi* hull appear to form the basis of two other new auxiliaries. In 2006 the 14,000+ ton *Danyao* class was launched. While its primary mission was not readily apparent, Chinese sources have pointed to its being designed to replenish Paracel and Spratly Island outposts. It can lower smaller cargo landing craft into the water to move supplies to the shallow water islets in the Spratly group, or use a helicopter. This ship would also seem suited to for potential future missions to deploy or tend underwater sensors in the South China Sea. Then in 2007 the PLAN launched its first purpose-built 14,000+ ton Type 920 *Anwei* class hospital ship. While its medical support capabilities have not been reported, this ship gives the PLAN a hefty tool to play a major role in future humanitarian relief operations. It can also serve to raise combat morale by offering a greater assurance of medical support for military personnel deployed for Taiwan, regional or extra-regional military operations.

Land Based Naval Air Forces

The People's Liberation Army Navy Air Force (PLANAF) consists mainly of land-based fighters, attack fighters, bombers, refueling tankers, plus land and sea-based helicopters. These units are assigned to the three PLAN fleets and the PLANAF conducts most of its own training. As the PLA becomes more comfortable with joint operations, and to realize command and personnel efficiencies, it is possible to consider the PLAN narrowing its types of land-based air assets and devoting most of its resources to new carrier based air wings. While the PLAN would be loath to reduce its combat capabilities, it is possible to consider the PLA Air Force lobbying to have the Navy give up most of its land-based fighters and bombers should it start building politically attractive aircraft carriers. The PLAAF's 3rd and 4th generation fighters and attackers, approaching 500 in number, are capable of mounting effective naval strikes. The PLAAF also has increasing numbers of AWACS and other support aircraft to better control naval air operations. The PLA Air Force may also be doubly sore, as its apparent attempt to control a possible future "Space Force" may not be meeting with success. It is also possible to consider the PLAN's coastal defense cruise missile forces being transferred to the Second Artillery.

For the current period however, it appears that the PLAN is intent on improving both its air forces and coastal defense missile forces. In the last decade the PLANAF has acquired one regiment of Su-30MKK2 fighter bombers, and may have three to four regiments of the Xian JH-7 and JH-7A fighter bomber. The Sukhoi is the more capable of the two and the PLAN may want to retain these, especially if the PLA opts to purchase Su-33s for its early aircraft carriers. The JH-7 approaches the performance of the British version of the McDonnell-Douglas F-4K *Phantom*, and uses the same Rolls Royce Spey 202 engines. In fact, a 1998 agreement between Rolls Royce and the PLA to revive a failed attempt of the 1970s to buy this engine led to a successful co-production agreement, which made the newer JH-7A possible. The PLA has recently revealed that it has equipped the JH-7 with new electronic warfare pods, in a manner similar to the U.S.

E/A-6 electronic warfare aircraft. Chinese sources have recently revealed a possible 1990s design effort to develop a more advanced stealthy version, called the JH-7B. This could also be Xian's attempt to compete with Shenyang's new J-11BS or another unknown stealthy attacker program.

Earlier this decade the PLANAF introduced a new version of the long-serving Xian H-6 bomber, this time armed with four wing-mounted 200+km range YJ-83 anti-ship cruise missiles. In small numbers, this bomber would not survive long in a modern combat environment, but it may meet with success as part of a larger coordinated massed launching of anti-ship cruise missiles from air and sea platforms. The PLANAF also uses small numbers of HU-6 aerial refueling tankers which serve a small number of Shenyang J-8 fighters equipped with refueling probes.

One area of deficiency for the PLANAF is in maritime patrol and anti submarine warfare aircraft. It does have a small number of Shaanxi Y-8 four-turboprop transports outfitted for maritime surveillance missions, and a small number of Y-8s also carry British *Searchwater* AEW radar. More recently the PLANAF has acquired new special mission Y-8s equipped for electronic warfare missions. Earlier interest in buying or co-producing the Russian Beriev Be-200 turboprop powered patrol seaplane has not materialized, and the PLA may instead be designing a new turboprop powered seaplane. The PLANAF does not have a dedicated ASW aircraft like the Lockheed Martin P-3 or the Russian Ilyushin Il-38.

The PLAN has also maintained a small but widely based number of coastal defense units armed with anti-ship missiles. Asian military sources have told the author in 2008 that the PLAN had upgraded its coastal artillery units near Taiwan with a new version of the YJ-62 long-range anti-ship cruise missile. The transporter-erector-launcher (TEL) for this cruise missile has since been revealed by Chinese sources, showing it is now a mobile missile, compared to previously fixed PLAN coastal missile emplacements. The long range of the YJ-62 raises interesting questions. Will the Second Artillery press to control these assets, inasmuch as the SA is also building its force new strategic land attack cruise missiles? Or instead, could the PLAN coastal defense force justify its acquiring new ASBMs, which are thought to currently be controlled by the Second Artillery? The latter possibility would increase should the PLAN successfully press for a submarine or ship launch capable ASBM.

Future issues: So far the PLANAF has not purchased the newer Shenyang J-11B or the Chengdu J-10 fighters. However, it may be attracted to the new twin-seat J-11BS, which would offer a better attack and training platform for carrier based pilots. In addition the PLANAF can be expected to take a strong interest in emerging UAV and UCAV programs of the PLA. Chengdu's large surveillance UAV would be ideally suit PLANAF desires to more closely monitor disputed territories in the East and South China Seas, down to the Malacca Straits. Inasmuch as China may now be developing a new four-turboprop engine transport aircraft similar in size to the Boeing 767, it is likely that the PLANAF will be an early customer for aerial refueling version of this airliner. In

addition, China's intention to build a new competitive 150+ passenger airliner by 2014 or 2015, similar in size to the Boeing 737 or Airbus 320, could provide a useful long-range platform for a dedicated ASW, patrol or electronic support aircraft.

Meeting the Challenge

China's potential to build a large power-projection navy by the 2020s will significantly alter the balance of power in Asia and globally. Should this new power be controlled by the same Chinese Communist Party that tolerates no legitimate opposition forces in China, is profoundly hostile to democracy, remains ready to militarily end democracy on Taiwan, and seeks to displace American power in Asia, there are bound to be opportunities for future conflict between China and the democratic states. However, in 2009 China has not yet assembled the myriad elements to build and sustain a global power projection navy. The U.S. Pacific Command controls the most powerful and deployable naval and air combine in Asia, which gives the leadership of the United States great flexibility to address challenges to its security and to exercise regional leadership.

Though the U.S. now faces a period of significant economic turmoil, which is in no small part responsible for recent decisions to curtail several expensive U.S. weapons programs, it is also short sighted in the extreme to dismiss the requirements for many of these systems as "next war-itis." China, North Korea, Iran and others are not giving the U.S. the luxury to ignore their increasing high-technology threats so the U.S. can better prosecute the low-tech wars of counter-insurgency. Sustaining the ability to deter China and others will only be increasingly difficult and expensive. The following are some key concerns and suggested responses:

--As it has been the U.S. experience, the PLA apparently has come to realize that a globally capable military requires access to space and perhaps control of space. The range of PLA military space programs designed to attack U.S. space assets means that an adequate U.S. defense and deterrent offensive military space capability is a requirement to sustain the U.S. ability to conduct global military operations.

--China's potential to develop a defended "Bastion" for future SSBN operations in the South China Sea raises the possibility of China's seeking to impose unacceptable controls over the commercially vital sea lanes of this region. This requires both a diplomatic and a military response if the U.S. truly values its traditional defense of "freedom of the seas." It would be ideal if China were to accept Western concepts of transparency and verifiable nuclear weapons controls but that is not likely. Absent this, it is necessary for the U.S. to change its longstanding neutrality regarding the South China Sea disputes and to work with regional allies to ensure that China is deterred from imposing control over this region.

--As the PLA builds an increasingly capable phalanx of anti-access forces, to include unique weapons like the ASBM, it also apparent that the PLAN hopes to have carriers

that can dominate regions in which the U.S. Navy has been deterred from or made ineffective. The ASBM threat makes more necessary the planned railgun and other energy weapons that would have best been enabled by the now curtailed DDG-1000 class destroyer. The advent of a Chinese carrier navy raises the issue of whether the U.S. Navy should develop its own long-range anti-ship ballistic missile for ship or submarine use, and sale to allies.

--At the same time, the advent of China's carrier navy raises the need to both consider the expansion of the U.S. carrier fleet in terms of numbers and capability, or the development of new sea-based platforms that are both more survivable and able to deliver effective air power. Though the U.S. Navy may be quite comfortable with its affordable fleet of F/A-18E/F combat aircraft, these may prove increasingly inadequate in the face of new Chinese Su-33, and future Chinese and/or Russian 5th generation carrier fighters. It not the time to limit the number of U.S. Air Force F-22 5th generation fighters or limit their sale to allies. The U.S. should also begin investing in a 5+ or 6th generation combat aircraft. It is also necessary for the U.S. to develop new compact but highly capable UAVs and UCAVs which can be deployed from a wider range of smaller ships and submarines, to supplement the increasingly vulnerable aircraft carrier.

--China's buildup of increasingly capable non-nuclear submarines challenges regional navies as it does U.S. naval forces deployed to the Western Pacific. Part of the U.S. response is the commit greater resources to restore anti-submarine capabilities to the fleet. There is a growing need for a carrier-based long range anti-submarine aircraft, either manned or unmanned, which has been lost by the retirement of the Lockheed-Martin S-3 *Viking*. There is also a growing need for the U.S. explore options to more economically compliment its expensive SSN fleet. This could include forward deployment of high-tech non-nuclear submarines, large UUVs and rapidly deployable seabed sensors. Washington should also follow through on its 2001 commitment to sell new submarines to Taiwan, and improve ASW cooperation with its allies. ⁱⁱ

Panel IV: Discussion, Questions and Answers

VICE CHAIRMAN WORTZEL: Thank you very much. I thank both of you for your testimony.

The first question will come from Chairman Bartholomew.

CHAIRMAN BARTHOLOMEW: Thank you. Thank you, gentlemen, for interesting testimony.

I have a question that's probably going to sound a little odd, but Mr. O'Rourke, I noticed right at the beginning of your testimony you note that your first report on China naval modernization for CRS, Congressional Research, was published in November 2005, and that it's been updated more than 35 times since then. That's three-and-a-half

years; we're talking essentially a monthly update.

I'm just wondering. That seems like a lot of updating. Is it because we're learning more about China's naval modernization or that the modernization is moving so rapidly that the products continue to be updated with new information?

MR. O'ROURKE: My report updates are driven essentially by two causes. One would simply be new information and news developments that cross my desk, and the other would be legislative developments as we mark up the defense authorization and appropriation bills typically each year, for example.

In the case of the China naval report, it's more the former than the latter. And so most of those updates have been driven by news developments that have crossed my desk where there is some new piece of information that I want to have incorporated into the report.

CHAIRMAN BARTHOLOMEW: And do you think that the news information is that more information is becoming available about China's modernization or again that more of this modernization is taking place?

MR. O'ROURKE: It might be a little bit of both. Certainly the modernization itself is underway, but I also think there's been perhaps an increase in the intensity with which Western observers are observing and writing publicly about that, and that includes people like Mr. Fisher and others, including people on blog sites as well as through regular magazine articles, and so on.

CHAIRMAN BARTHOLOMEW: One of the things that we've noticed in a number of different fronts is that people are continually surprised by how quickly China is making progress on whatever the fronts are that we're talking about, be it trade, be it research and development, and certainly in terms of its military growth and military modernization.

Secretary Rumsfeld, one of the things that he used to say about intelligence, is we know what we know, we know some of what we don't know, but we don't know what we don't know. I've noticed today that people have been speaking generally with some level of confidence in the information, but we've been surprised a number of times over the course of the past few years with things like the anti-satellite, the ASAT test, with the surfacing of Chinese submarine in the Kitty Hawk carrier group.

I wonder, do you have anything, either of you, in particular, that are sort of the unknowns out there that you find yourself concerned about, anxious about? What happens if we get up one day and find out that "x" has happened, and we didn't really expect that the Chinese would be so far along, what would that "x" factor be?

MR. O'ROURKE: I think that's an excellent question. There are

some elements or dimensions of China's military modernization effort including its naval modernization effort that are more readily observable than others.

The developments in hardware, I think, tend to be more readily observable than some of the developments in the soft side of their military modernization, things having to do with personnel quality, education and training. You can sort of look at that, but our ability to quantify that and count it I think is a more challenging task.

But even on the hardware side, there are some aspects of this that are more observable than others. Things coming out of shipyard sheds are observable, but they're not observable when they're inside the shed. R&D activities that are inside laboratories are not readily observable.

Now, you can go to trade shows, like Rick does, and other things, and you can get hints of this, but there are elements of this that are easier to observe and elements that are less easy to observe.

So my sense is that we have the ability to see quite a number of things about China's military modernization, but it's an incomplete picture. I think we just need to be aware of the fact that there will always be aspects of it that we are unaware of until some later point when they do become much more readily observable.

CHAIRMAN BARTHOLOMEW: Mr. Fisher, anything in particular?

MR. FISHER: I'm continually amazed by the number of hints that I can gather from open sources, and if you just extrapolate a small step on what is gathered, one can become very concerned.

For example, in the last three years, I've noticed a number of interesting statements from various high Chinese space officials about the military significance of the moon. Recently, a Chinese official stated that the second China's moon exploration craft, the first soft lander to be put on the moon, will have a radar and a laser range finder.

Of course, this is all justified in terms of scientific research, but we all have a pretty good idea of what flies around between the earth and moon--our deep space early warning satellites. Is this the beginning of an effort masked under a dual-use program to accelerate their ability to take out our early-warning satellites and, thus, deeply undermine our nuclear deterrent and retaliatory capability?

This is one possible development that I think should concern us.

CHAIRMAN BARTHOLOMEW: Thank you.

HEARING COCHAIR VIDENIEKS: Let me in Larry's absence ask a question. Mr. Fisher, you mentioned smaller combatants-landing craft. In the U.S., I think the Army has more ships, if you count those, than the Navy. Does that also apply to PRC and who has possession of

the landing craft? The PLAN or the PLA?

So that's basically the question. One, are they even counted as combatants, and two, are they being modernized? Who has them? And roughly does the PLA have more of them than the PLAN?

MR. FISHER: So you're just concerned about the number of--

HEARING COCHAIR VIDENIEKS: Well, landing craft.

MR. FISHER: Landing craft.

HEARING COCHAIR VIDENIEKS: I was on one.

MR. FISHER: Well, there are about six or seven classes of small landing craft. The number I think ranges probably between 150 and 200 that we can count. There is one class called the Yubei, which is very new. It started to appear in I think 2003-2004, has a roll-on/roll-off capability.

HEARING COCHAIR VIDENIEKS: How big are they roughly?

MR. FISHER: Reports indicate they can carry maybe less than ten tanks. That number may be smaller, but the PLA Army, in my opinion, controls these ships. The PLA Navy, of course, controls most of them, but even the PLA Air Force has its own navy. They have a small number of logistic support ships to help aircraft units move across the Taiwan Strait.

Beyond that, sir, I would suggest that little attention is paid to the ability of the PLA to mobilize non-military fleets. China has over 150 fast ferries, and if any of you have taken a ferry ride out of Hong Kong, you can have an appreciation of what these ships can do, and they have been used in some public PLA demonstrations. But 150 of those, probably hundreds more non-fast ferries, and then the number of roll-on/roll-off cargo ships that could be mobilized to support amphibious operations.

Once a port is captured, then the number of formal PLA Navy transport craft will pale quickly compared to the number that the non-PLA civilian ships that will be pouring in troops and material.

HEARING COCHAIR VIDENIEKS: Right. But my question basically is; are we, when we compare forces, talk about naval modernization and so forth, are we taking landing craft, military landing craft, into account in our analyses?

MR. O'ROURKE: I think in terms of force-on-force analyses for different scenarios, I'm sure the Defense Department takes China's amphibious lift capability and all of its elements into account, but to build on something that Rick said a moment ago, I think it's worth noting that there are already countries elsewhere that have taken civilian high-speed catamaran ferries and used them for military operations. Australia did this to support a military operation or intervention in East Timor, and that inspired the U.S. Navy to look at high-speed catamaran ferries as a basis for high-speed military

transports, and it's now the basis of the U.S. Navy's Joint High-Speed Vessel Program.

Those are essentially military versions of ships whose designs originated in Australia through a tradition of building high-speed catamaran ferries there.

But also to get back to something at the start of your question, which had to do with the nomenclature of small--

HEARING COCHAIR VIDENIEKS: They used to be monohull though. The landing craft used to be kind of squarish-looking jobs, not the catamaran construction.

MR. O'ROURKE: I think the very small landing craft are not necessarily that different from that today, but these somewhat larger high-speed ferries that we're talking about that Australia has really spearheaded the design of on a worldwide basis tend to be catamarans or in some cases tri-marans.

But to get back to the nomenclature issue that you raised at the start of your question, if I could hazard a guess, when Rick was talking about small combatants, I think he was not mentioning--he did not intend to refer at that point to the landing craft. He was referring to a small missile-armed attack craft known as the Houbei or Type 22 class, which is a small, high-speed catamaran or tri-maran from an adopted Australian design that is armed with anti-ship cruise missiles.

That is a small combatant as opposed to a landing craft.

HEARING COCHAIR VIDENIEKS: Right. Thank you. Maybe I was wrong with respect to classification, but I am curious about the landing craft. What are they considered? Who has them? And how do we account for them?

MR. FISHER: Yes, just to expand on what Ron has mentioned about the wave-piercing catamarans. There are now at least two fast-ferry designs that I've been able to detect that are based on the wave-piercing catamaran technology that was purchased from Australia and which forms the basis for the Hubei Type 022 fast-attack craft. There have been some suggestions in the popular Chinese military press that the Hubei may be expanded into a corvette-sized vessel that could deploy unmanned aircraft. They may not approach the size of the U.S. Littoral Combat System, but they may perform many of the same missions.

And the fact that the U.S. Navy has wave-piercing catamaran ferries under development points to the potential that China could also decide to make a large, close to 1,000 ton, fast-ferries, such as the U.S. Navy has just ordered within the last year.

HEARING COCHAIR VIDENIEKS: Thank you.

VICE CHAIRMAN WORTZEL: Mr. Fisher, in your written submission, actually on page 17, you have a very interesting

discussion of the engines for the JH-7 fighter bomber as being Rolls Royce Spey 202 engines or based on the British Rolls Royce Spey 202 engine. You have a discussion of the radar on the Y-8 turbo prop aircraft having the British Searchwater airborne early warning radar. You just mentioned the wave-piercing catamaran technology that was purchased from Australia.

Could you talk a little bit about, could both of you, if you're able to, Mr. O'Rourke, talk a little bit about what other significant improvements in PLA Navy capabilities or systems have depended on the assistance of American allies?

MR. FISHER: I would just offer a recent datapoint. In March 2008, Britain's Cranfield University, a well-known center for military technical research, signed a contract with a Chinese counterpart to begin to train engineers for turbine engine development.

The development of advanced turbofan engines has proved to be an Achilles' heels for PLA modernization of the last 20 years. China has faced challenges in mastering not just the engineering but really the art of the engineering to put together successful turbofan engines and their naval derivatives.

They've devoted a great deal of effort. They have brought in the Russians at various points. It's my sense that they are on the cusp of success, where they are beginning to deploy the first models of an "indigenous" turbofan that may improve rapidly over the next decade.

They are already working on the engine that will power their future fifth generation fighters, called "fourth generation" by the Chinese.

I would also mention space. The relationship between Surrey Space Systems, and the Chinese appears to have winnowed down significantly. But the time of cooperation in the late 1990s, early into this decade, went far to help China create what is today a competitive center for small and micro-satellite research and development.

And they are moving ahead and I believe that this is one area where they will be very competitive with us very soon. But those are just two examples.

MR. O'ROURKE: Just a couple of additional comments. The Defense Department in their annual military report has called out the Israeli Harpy UAV as something that was supplied to China, and more recent editions of the DoD report have mentioned the fact that Israel since then has tightened up its export control procedures, and I think the implication is that DoD doesn't expect things like this to happen again in the future. But the Israeli Harpy UAV has been mentioned in prior editions of the DoD report.

In general, their surface combatants have a fair degree of reliance on foreign technologies for certain key subsystems, especially

their propulsion plants and some portions of their combat systems. The turbines, in large part, are coming from the Ukraine. I'm not sure what portion of the combat system equipment might be coming from Western European as opposed to Eastern European countries, but this is an issue that has been observed a number of times about their surface combatant program.

Beyond the issue of exactly what country it comes from, it has raised a question in some people's minds about exactly how easily or how well China will be able to maintain these ships if they contain a combination of systems from various countries.

MR. FISHER: Ron just reminded me, there has been actually a competition between the Germans and the French to power the latest classes of Chinese frigates, the stealthy, well-equipped O54 and 054/A class frigates. Both SEMT Pielstick, the French company, and MTU, a German company, have had a long-standing maritime diesel and engine co-production arrangements with Chinese shipyards, and these engines have featured into what my sources have told me has been a bit of a competition.

They're not made in France or Germany. They're made in China. But, of course, the parent company gets a royalty so there is a bit of a competition. The Germans just won the competition for the engine for the frigate that will succeed the 054. They don't know what that frigate will look like, or anything about its main mission.

And should the European embargo be lifted, I expect that there will be a wide range of military technology exports. Regarding helicopters, Eurocopter and the Chinese have developed what the Chinese call the Z-15. This is a helicopter, not quite as heavy as our Seahawk/Black Hawk, but is more capable than the sort of smaller medium Z-9 that the PLA Navy uses.

The Z-15 could turn out to be a capable medium-sized naval helicopter.

VICE CHAIRMAN WORTZEL: You've both discussed technologies from American allies that have made significant contributions to the development of People's Liberation Army's Navy and military. What do you think those allies of ours would be doing to help them out or U.S. companies if we lifted the Madrid sanctions against arms sales to China from the Tiananmen massacre?

MR. FISHER: Well, have you looked into the issue of how many companies are already producing the Humvee versus the more recent announcement that the Humvee is going to be sold to a Chinese company? There's been a substantial traffic in U.S. dual use technology going to the PLA and I wrote this up for our Web site late last year. The Humvee is probably the most important example, but then again there's another very troubling example.

Since the 2004 Zhuhai Air Show, the PLA has been using two Boeing 737s modified for which my sources say are cruise missile development missions, electronic support missions.

There are Chinese internet images of these Boeing 737s on an airfield along with other electronic support aircraft, PLA Air Force electronic support aircraft. What has been done? Who has asked questions? What official from the Commerce Department has explained how this happened and why? And why is an American-built airliner flying in the PLA Air Force conducting military missions?

I think this is already a problem, and if the sanctions are lifted, it will grow larger.

VICE CHAIRMAN WORTZEL: I appreciate it.

Commissioner Mulloy.

COMMISSIONER MULLOY: Thank you, both, for being here and your very thoughtful testimony that you both prepared.

Mr. O'Rourke, I presume you are not, you're speaking for yourself today rather than for CRS. So we can ask you questions that are wide open and you're not representing CRS; right?

MR. O'ROURKE: Well, I'm testifying here pretty much under the normal rules that I usually would abide by as a CRS analyst. It's easier for me to stay in that mode.

COMMISSIONER MULLOY: Okay.

MR. O'ROURKE: Because it's a mode that I'm very used to operating in. But I'll do my best to respond to your questions.

COMMISSIONER MULLOY: Mr. Fisher, on page 18 of your testimony, you talk about China's growing power and their power projection navy will significantly alter the balance of power in Asia and globally. And then you further in that paragraph you say that they're seeking to displace American power in Asia.

Earlier, Mr. Cooper, on page 12 of his testimony, said that the Chinese are out to diminish U.S. influence and access in Asia as that's necessary to accommodate their reemergence as a great power.

Do you agree with what Mr. Cooper said, that they feel it's necessary to drive us out of Asia or diminish our influence in Asia in order so that they can reemerge as a great power?

And Mr. O'Rourke, if you'd comment on that.

MR. FISHER: Well, I think that there are clear military objectives that are driving the political objective of diminishing American power in Asia.

I would just point to one of these: the emergence of their SSBN second strike capability. Many questions are still unresolved about how many SSBNs they will build, how will they deploy them, what are the ranges of the missiles that are on the SSBNs, multiple warheads or not, and such?

As far as I'm able to tentatively determine, I think that there is a good possibility of a linkage between the build-up of the new naval base on Hainan Island, the construction of a very expensive underground facility, perhaps of questionable military value, but at least they can hide things, and the now 30-year drive to impose control over the South China Sea.

If you look at the geographic challenges facing a Chinese SSBN fleet, essentially they can't put them in the north. Water is just too shallow. But if you steam a few hundred kilometers south of Hainan Island, you're in very, very deep water, much more amenable to SSBN operations.

So what do they do before they have SSBNs that are quiet enough to elude most, if not all, potential American, Russian or Indian SSNs that may be chasing them?

It appears China is beginning to demonstrate that they are going to adopt a Soviet solution, which is to create defended bastions in the South China Sea and defend these areas with undersea sensors, mines, and an increasing number of submarines and the surface ships including aircraft carriers to ensure that these submarines can get to the place where they can conduct their mission.

Some Internet sources suggest that a 12,000 kilometer range version of JL-2 is in development. I can't confirm that, but let's say if that were to happen, that would enable the new SSBN, the 094, to launch strikes against Los Angeles and Seattle from just to east of Hainan Island.

So here we have an example of how a PLA Navy modernization program is beginning to join a long-standing political program to strengthen Chinese control over a specific area, and once those things come together, possibly by early, middle of the next decade, I believe there is going to be a great deal of China's sensitivity to American reconnaissance or other activities in that area.

Who knows? They might even take actual shots at us and do other things to make very clear that they want the Americans out. And the implications there are pretty enormous. Are they going to have to have the forces to have control over those sea lines going through the South China Sea as well? Are they basically going to set up toll booths north and south of the South China Sea?

Japanese, the South Koreans, the Taiwanese, and our commerce that depends upon the circulation of all these ships will all be affected.

MR. O'ROURKE: Just very briefly, I think many observers are of the view that China is currently on a course where it is attempting to emerge as a major regional power and beyond that as a major world power, and that part and parcel of that is their hope or their intention

to have a greater influence over the decisions and actions of other countries.

I don't know if in the minds of the political leaders of other countries in the Pacific basin whether they view it as a zero sum game, that if one person has more influence over our actions, the other must necessarily have less, and so I don't know if an increase in Chinese influence would necessarily in some mathematical way mean a reduction in the absolute amount of U.S. influence.

But I do believe it's China's goal, and I think many other people share this belief, that they would like to have more influence, and at some point if their influence becomes great enough, it could outpace the amount of influence that the United States may have over the decisions and actions of a given country.

And so that is essentially how I would answer your question, and that's why in my view, it's important to focus on the fact that our military forces, and particularly our Navy, are important, not solely in the context of a possible conflict between us and China, but in the context of such a conflict never taking place, and instead a political competition being underway in the Pacific basin for the political alignment and the decisions and actions of the countries in that part of the world.

Your influence in shaping a region like the Pacific is not something you would do solely through the military. It would be something you would use all your elements of national power and influence for. But the military is a part of it. And in the Pacific basin, naval forces are a particularly important part of the military component, and so that is why I am trying to focus where I can on the issue of what happens if there is no conflict.

Because even if there is no major or even minor conflict between us and China, that doesn't mean that there won't be an ongoing political competition in this part of the world for the political alignment of many of those countries, and this is a difference between the situation that we have going forward in the Pacific basin and what we had during the Cold War in Europe because at that point in Europe, most of those countries were locked into one alliance or the other; their decisions were already made.

But in the Pacific basin, a lot of those countries have yet to define where they might ultimately go in the future. And it's in that context that I think people are looking at what might be the overall military balance in that region because that is a portion of what people then take into account when they might make decisions about where they want to align their policies in the future.

COMMISSIONER MULLOY: I'm over my time so I'll stop there, but Mr. Chairman, if there's a chance to come back, I would appreciate

it.

VICE CHAIRMAN WORTZEL: Commissioner Fiedler.

COMMISSIONER FIEDLER: I want to take off somewhat on Vice Chairman Wortzel's question, but slightly different. The United States is heavily dependent on commercially available components for its weapon systems to the point that we don't necessarily know where we got stuff anymore or if we ever knew it.

I want to explore how dependent the Chinese are on commercially available components, and what percentage--and let's limit ourselves to naval considerations since this hearing is on that--what percentage can they produce self-reliantly themselves as opposed to having to import it?

And I honestly don't know what the measure is and suspect that a percentage quantification is an insufficient description or answer. Can you explore that with me?

MR. FISHER: In the early 1990s, China did not have naval combat systems competitive with neighboring navies or with the US Navy. So China purchased the Kilo submarines outright, then purchased four Sovremenniy destroyers, but what we also saw during this same period was that the Chinese were driving a hard bargain.

They were insisting on co-development deals that would allow them to begin to produce their own versions of much of the electronic and weapon systems that were going on these ships. So by 2003, 2004, you had the emergence of three classes of air defense destroyers that had differing mixes of foreign-builts, domestic co-developed or domestic-made sensors and weapons systems.

It's my opinion that based on what they've learned to do in the electronic realm, control systems, and what they've co-developed and learned from that, in the area of weapons, the next classes of ships will be far less dependent on foreign outright purchases or even co-production, co-produced systems.

One of the popular Chinese military magazines that you can buy on the street, that deals in a lot of speculation about future systems has, posits the next generation air defense destroyer essentially looking like the American Arleigh Burke class, with two helicopters, two banks of vertical launch SAMs, some anti-ship missiles, and a phased-array radar systems that look as if they're a substantial improvement over the first generation phased-array system on the type 052C Aegis destroyer that was deployed in the first round of ships that went to the Persian Gulf to chase pirates.

MR. O'ROURKE: The impression I get is that years ago China had a strong interest in purchasing foreign systems so as to increase their own technological baseline. And that it was their intention after that to begin working toward a goal of reducing in general their

reliance on foreign supplied systems and components, and that in the years during which they have tried to implement that policy, they have had success at varying rates in varying areas, and there are some areas where their rate of progress may not have been as great as what they had hoped or planned for and others have gone a little better.

But my sense is that their general direction is one of in the main reducing their dependence on foreign technologies over time now that they have imported enough to raise their basic technological baseline.

MR. FISHER: Another interesting datapoint is that probably about the same time that the first Chinese-developed modern high-powered turbofan starts appearing in air force units, we will also see a maritime derivative of that same engine start to go to sea.

I think they've put a high priority on developing a reputable reliable naval turbine engine out of the aircraft engine development program.

MR. O'ROURKE: And if China were to do that, that would not make China necessarily different from other countries.

COMMISSIONER FIEDLER: Well, no --

MR. O'ROURKE: As other countries use marinized versions of their airplane engines in their ships.

COMMISSIONER FIEDLER: And the United States is heavily dependent on imported components for many of its weapons systems.

So the question that I'm really trying to get at is do the Chinese believe that they have to be self-reliant or can they, like us, depend on imported components? Forget the technology question here for a second. You can produce it or I mean you can get it. Do they, are they making a choice we must produce it or not?

MR. FISHER: I think that they have accepted that there will be for some period a dependence on a range of naval technology components that they will have to purchase from abroad, but, as Ron says, the goal is to produce as much of this as possible, not just for their own military security, but to engage in another aspect that hasn't been touched on much here, but to begin to try to compete and in the future dominate military export markets.

COMMISSIONER FIEDLER: Yes. Yes. That's right.

MR. FISHER: There is a significant amount of Chinese arms sales activity taking place in Southeast Asia to sell advanced weapons, that to me is quite alarming. Before they even launched their first LPD, they were marketing it to the Malaysian Navy, and I've had Chinese and Malaysian sources confirm that to me.

COMMISSIONER FIEDLER: But--if I may, that's less a component production problem than a technology control question. In other words, I can have the best technology, import the components from all over, and beat you in the market in selling weapons.

I was much more concerned about their own capabilities. So you're not willing to proffer any guesses on how it takes them to be largely or less, critically less dependent on foreign sources for their military capabilities?

MR. O'ROURKE: I wouldn't be comfortable giving you an exact date or a specific time line.

What I want to give you the sense of--

COMMISSIONER FIEDLER: Decades?

MR. O'ROURKE: --there's a lot of different pieces and parts of different platforms we're talking, and I think some of these will see progress faster than others. They've been struggling with the turbine engine issue for any number of years now, and you get conflicting assessments about just how quickly they are overcoming those problems.

But in areas like anti-ship cruise missiles, they've made a lot of progress, and they are substantially self-reliant, at least for missiles other than those that might be extremely high speed or highly challenging anti-ship cruise missiles.

COMMISSIONER FIEDLER: Okay. Thank you very much.

Yes?

MR. FISHER: I'd say just by the middle of the next decade, it will be difficult to deny the PLA an advanced military capability simply through end-product denial. There may be an increasing requirement to move to even further down the food chain to the actual resources, the metals, the whatever it is they're importing to make the component.

COMMISSIONER FIEDLER: Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Slane.

COMMISSIONER SLANE: Thanks, both of you, for taking the time to come here today.

Do you see the PLA Navy modernization leading to a naval arms race? We'll start with you, Mr. Fisher.

MR. FISHER: Well, I think we are now in an arms race. What do we do about the emergence of their anti-satellite and co-developed anti-ship ballistic missile capability? I'm not sure that we've really come up with a solution for that, and part of the solution, the DDG-1000 destroyer, which would have been able to much more effectively deploy rail guns and perhaps laser weapons to form a much more capable terminal defense against an ASBM, well, that program is almost gone.

So, in a sense, in that very tight competition of technology versus technology, the Chinese are racing on two feet, and we're beginning to take away one of ours. Let's look elsewhere. Just consider the fact of the possibility of a four carrier Chinese Navy,

five-carrier if you look at the Varyag simply becoming a training platform, and if you follow the reports of January.

The PLA makes very, very few leaks to the press. In my experience, they've not made any leaks to the press about how many missiles we're going to build, what they will be doing militarily in space, but in January, we had competing stories between the Asahi Shimbun and the South China Morning Post over the carrier program, really amazing.

So I think we have to look at this and hold those datapoints up as a possibility, first, two non-nuclear carriers, essentially copies, modified copies of the Varyag, and the movement of the Varyag into its new drydock, which didn't exist two years ago, to serve possibly as a template for the next two ships, which could come very quickly, and then the nuclear-powered carriers later in the next decade.

What does a five-carrier force mean for the United States Navy? I hope this is something we are considering today. What does that mean in terms of the capabilities of the systems that go on those carriers? If the Chinese, as is sometimes suggested, go out and purchase very well-upgraded Russian Sukhoi 33s, on a plane-on-plane contest, those SU-33s could have a better chance of defeating our Super Hornets, F-18E/Fs. That does not set well with me.

I think China is already in an arms race, Commissioner. I just wonder if we're racing.

MR. O'ROURKE: If I can give you three perspectives on the question of a naval arms race. One perspective, which has been argued, is that the United States needs to be careful about not overreacting because that might prompt a naval arms race or prompt therefore the Chinese to do more than they otherwise would.

The second perspective, which is on the other side of that argument, is that if the United States does not compete with China, it could actually promote further Chinese naval build-up by convincing Chinese leaders that what they're doing is succeeding in intimidating the United States into taking actions necessary to defend its own interests.

The third perspective is that Chinese naval modernization is driven more by internal Chinese dynamics than it is by external influences such as what the United States may or may not do with its own naval program--and that, consequently, although what we may do or may not do may have some influence, most of what may happen with China's naval development may be a result of internal developments that are largely beyond our ability to influence one way or the other. They have to do with China's desire to emerge as a major regional power and beyond that as a major world power. And they may have to do with China's views of its own interests and how to go about

defending them.

So that's three different ways of looking at that question.

VICE CHAIRMAN WORTZEL: Commissioner Bartholomew.

CHAIRMAN BARTHOLOMEW: Thank you and thanks, again, gentlemen.

One of the pleasures of coming at the end of the day is we actually all have far more time to be able to ask all the questions that we have instead of being cut off because of time.

But I'd like for both of you to talk a little bit, if you would, other than just plain size, how does the PLA Navy stand up to other regional actors--South Korea, India, Japan, the Philippines, Vietnam?

MR. O'ROURKE: I can start on that. In terms of size, one of the other things you want to look at are the qualitative aspects of their fleet, and Japan has a pretty much first-rate navy qualitatively. And so one thing you would do in comparing China with Japan, for example, would be to note that Japan's Navy is somewhat sizable, but it also is very high up the quality scale, whereas, China's Navy has high quality components to it, but they are still moving up the quality scale.

And so in that sense, if you're looking at that one dimension of naval capability, the qualitative aspects, then Japan I think would stand pretty well in comparison to China.

Even the South Korean Navy has some fairly good qualitative aspects to it. They are building Aegis destroyers, for example, and in fact, there's an emerging constellation of Aegis ship operators in the Pacific other than the U.S. Navy that is beginning to take hold.

So aside from size, if you were to look at quality, there are other countries in that region that have some fairly high quality naval capabilities--Japan, South Korea, and Australia. Others are not as far up the qualitative scale, and I think you mentioned the Philippines. They would be one example of that.

India is an interesting case in the sense that they are moving to modernize their navy at roughly the same time that China is now doing it. So we may see an interesting dynamic develop between, not just between the United States and China, which was the earlier question, but between China and certain other countries, including India, and that has to do both with investments and capabilities and in terms of operations in certain ocean areas.

CHAIRMAN BARTHOLOMEW: Mr. Fisher, anything to add?

MR. FISHER: Commissioner, yes. The only navy that impresses me in terms of future potential is that of India. India, I believe, has the desire and is able to mobilize the national will and the resources to defend its expanded maritime interests, and that has been reflected in their decision to purchase nuclear-powered attack submarines, to

pursue a modern aircraft carrier fleet, to purchase and build competitive non-nuclear submarine types, and to rapidly expand their navy diplomatic relationships with other regional navies and with the US Navy.

I think that there's a sense on the Indian part that they have to have a military dimension to reflect their interests in maintaining sea lane access to their major trading partners that are in Northeast Asia.

Regarding the Japanese Navy, while I agree entirely with what Ron and others have said about the professionalism, the capabilities of the systems that they have, Japan's effective naval development, will be limited politically as long as they adhere to strict interpretations of their constitution.

Aircraft carriers, real all-around offensive capabilities, the ability essentially to ensure sea line access all the way to the Persian Gulf, those capabilities are subcontracted today and have been for generations to the U.S. Navy. It is my fear that the Japanese will realize that the systems that China is now developing could take away their US insurance policy.

If U.S. carriers that are forward-deployed are taken out, it's going to take weeks to get replacements on line. That would be, to me, unacceptable for Japan. Whether they will mobilize and come up with their own solution to that, I don't know, but perhaps this is a conversation that we should be having with them.

CHAIRMAN BARTHOLOMEW: Thank you.

VICE CHAIRMAN WORTZEL: Mr. O'Rourke, has the JL-2, the submarine launched ballistic missile, been tested operationally yet or is it still a system in development?

MR. O'ROURKE: I think DoD is stating that they expect that missile to become operational in 2009 or '10, and based on that schedule, without actually having reviewed any data on testing, I would presume that it would have undergone some amount of testing by now because it's already 2009.

VICE CHAIRMAN WORTZEL: Well, it's had a pop-up test, but have you seen an operational test?

MR. O'ROURKE: I don't recall offhand seeing any news accounts of any such tests.

MR. FISHER: During the naval anniversary, CCTV ran pictures of what I believe are the pop-up tests.

VICE CHAIRMAN WORTZEL: That's the pop-up test. I understand that.

MR. FISHER: Yes.

VICE CHAIRMAN WORTZEL: That's not the same thing.

MR. FISHER: I've not heard of any full range tests.

VICE CHAIRMAN WORTZEL: So we don't know that it's an

operational system yet. We know that it's a system in development?

MR. FISHER: We know that it's certainly in development. I think outstanding questions exist surrounding whether it will have one or more warheads, and whether longer-range versions are being developed as well.

MR. O'ROURKE: And we know what DoD has stated publicly about their own expectations for when the missile is to become or could become operational.

VICE CHAIRMAN WORTZEL: Thank you.

Commissioner Videnieks.

HEARING COCHAIR VIDENIEKS: Quick question. Mr. Fisher, you expressed concern about the number of carriers that could be in production and/or near production in PRC. And Mr. O'Rourke, in your paper, you argue that the size of the carrier matters as far as the size of the wing, aircraft wing, it could carry. And apparently the planned PRC carriers are like maybe half the size of our big ones.

MR. O'ROURKE: The size of the carrier matters not only in terms of the numbers of planes, but in terms of what kind of aircraft operations--

HEARING COCHAIR VIDENIEKS: Right.

MR. O'ROURKE: --you can support.

HEARING COCHAIR VIDENIEKS: The vertical takeoff versus the horizontal.

MR. O'ROURKE: Right. And the general understanding is that if your ship is large enough to support conventional takeoff and landing, or CTOL aircraft, that these are in the main more capable than VSTOL because they don't have to spend so much gas taking off and landing, that they can therefore operate at further ranges.

I've looked at the press accounts about the emerging Chinese aircraft carrier construction program, and when tonnage figures have been quoted, some of them have been in the 60 to 65,000 ton range which would be slightly larger than the Varyag ,which is like a 58, 59,000 ton ship.

Other people have speculated that China's initial carriers could be as small as 40,000 tons, which would make them roughly the same size as our own amphibious assault ships, our helicopter carriers, which are VSTOL ships; they're not CTOL capable ships.

HEARING COCHAIR VIDENIEKS: Understood.

MR. O'ROURKE: And so in my own reporting, I have said that initial Chinese aircraft carriers, if built, could be in the range of 40 to 70,000 tons. I bracketed that range. And that if they were to get into a program of building multiple carriers, that subsequent carriers could be larger than that, than whatever the initial set are, and they might more likely be nuclear powered as opposed to being, the initial ones

more likely being conventionally powered.

I think a good number to look at is if you are above 60 or 70,000 tons because then at that point, it becomes more likely that the ship can support CTOL aircraft operations as opposed to VSTOL only.

HEARING COCHAIR VIDENIEKS: I just wanted to clarify that. The other question is why are we still concerned about the Harpy? That's like a '70s technology. Have they upgraded it or what?

MR. O'ROURKE: Well, it was only my intention to answer the earlier question about what U.S. allies, and if you posit that Israel is a state that is friendly to the United States and to which we have certain security commitments, then under that definition, they then become a state that you could include in an answer to that question.

HEARING COCHAIR VIDENIEKS: Thank you. Sir?

MR. FISHER: I agree with what Ron has said about aircraft carriers. I would again just reiterate the leaks that were made in January, posit two Varyag size carriers that can handle CTOL aircraft operations with a ski jump instead of a catapult, and the potential to build a larger nuclear-powered carrier.

Another datapoint that came out was a report that they had purchased the plans to the Russian Soviet Ulyanovsk class nuclear-powered aircraft carrier, which was never built, but had an intended weight of about 80,000 tons. So that could carry a larger air wing.

I am quite concerned about China's interest in vertical takeoff aircraft. In the 1970s, they made an attempt to buy the Harrier. In the early '90s, the Russian Yakovlev concern made a big push to try to sell China the supersonic Yak-141, but they were not successful.

A Chinese source told me in early 2005 that the Chengdu Aircraft Corporation was interested in pursuing an F-35 class program. That, of course, is a aircraft that has been developed in multiple versions for vertical takeoff as well as conventional takeoff.

Were the Chinese to produce an F-35, a STOVL capable fifth generation fighter, that would open up many other opportunities for smaller carrier decks or to take a larger LHD, perhaps a larger version of the planned 081 class, and devote carriers to bastion or pro-SSBN missions while their larger carriers can undertake diplomatic, political power projection missions.

HEARING COCHAIR VIDENIEKS: Thank you.

VICE CHAIRMAN WORTZEL: Commissioner Mulloy.

COMMISSIONER MULLOY: Thank you, Mr. Chairman.

I wanted to just pick up and get through this pretty quickly. We were talking, again, about whether it was China's interest to kind of reduce American power in Asia to strengthen its own. I think we both agreed that China wants to increase its power in Asia.

The question is does it have to necessarily be at America's

expense? You're not sure; you think yes.

Now, let me just go further. Do either of you, or what do you think--have U.S. economic-trade-financial policies strengthened the ability of China to have a much stronger military and perhaps displace U.S. power in Asia?

MR. O'ROURKE: In a very basic sense, and I'm at the edge of my knowledge here talking about economic issues, but I think a number of observers have argued that China's ability to sustain a military modernization effort is grounded in the growth of its larger civilian economy.

So if their trade actions are part of what has led to the growth of their larger civilian economy, then indirectly that is creating a foundation to support a larger military effort.

COMMISSIONER MULLOY: All right. Do you agree with that, and I

I want to get it in now because there are a couple of things I want to get on the record.

MR. FISHER: I would put it this way. To the degree that things, actual technologies, are flowing from the United States--knowledge, technology, things are flowing from the United States to the PLA, I think this is happening largely because we have dismantled so much of the export control apparatus that was put together at great effort and expense during the Cold War.

10,000--how many--students are studying in our high-tech university programs? I would assume a large proportion of them are computer savvy. What are they putting into hard drives and taking home in their luggage? Are we looking at these things?

We could do a DoD/PLA report just on how China is exploiting this economy and our education system to assist its military modernization. Espionage--

COMMISSIONER MULLOY: I'd just want to get in this last point. I do think that our economic, financial and trade policies have strengthened China and made it grow stronger, faster, and other things, and I think they've been detrimental to our own economy where we're now the largest international debtor; our manufacturing base is moving offshore.

When I first went to China in '81, I didn't see any cars. You saw--like a Checker cab, that was their big car. Now, they're making more cars per month than we are, and that's not just export controls; that's investment; that's technology transfer; that's know-how transfer.

That just didn't happen by accident. They helped bring this all about. Now, when people raise these issues in our internal debate politically in this country, the Chinese always label them protectionists, and a lot of our own people label them protectionists.

Labor has been out there saying these things, but labor has kind of pushed--what I don't understand is why is not the national security community of the United States making a bigger stink about what is happening here?

I'd like your opinion since we've now established the fact--the question is based on these, why isn't the national security community making a bigger stink about this?

MR. O'ROURKE: Just very quickly, in my earlier answer, I was referring to China's economic policies having built up China's economic strength. I wasn't making a comment about U.S. economic policies although I understand that that was the spirit of your question.

In terms of the question you're now asking, that's a good question, but I do have to beg off on the answer to that because it's outside my lane.

COMMISSIONER MULLOY: Thank you.

MR. FISHER: Quite simply, successive administrations since the opening of relations with China have not decided that China poses enough of a military threat to the United States to warrant the level of economic protection, broad and narrow, that you suggest.

COMMISSIONER MULLOY: Do you agree with that? Or do you think that we should be making a bigger stink?

MR. FISHER: I think that it is a scandal that we are not protecting our technology and succeeding in prosecuting and wrapping up many more Chinese espionage networks than is currently the case. In terms of the narrow Chinese focus on obtaining militarily useful technology, I think our society is still, has been and remains a sieve.

COMMISSIONER MULLOY: Well, what about this aspect: what about a major American corporation moving R&D and semiconductor manufacturing capabilities out of this country to China? That's not an export control issue. That's an investment issue. Does that concern you?

MR. FISHER: Well, to the degree that issues such as this would rise to the level of consideration by, let's say, CFIUS--

COMMISSIONER MULLOY: No, CFIUS is with who's buying what here. This is we're sending stuff over there.

MR. FISHER: Commissioner, I would agree with your concern, and that if there is indeed a national security implication to a major portion of our industrial capability, a capability important to our defense food chain going overseas, then somebody should be making noise about this.

COMMISSIONER MULLOY: Thank you, both. Thank you, Mr. Chairman, for your consideration.

VICE CHAIRMAN WORTZEL: Chairman Bartholomew.

CHAIRMAN BARTHOLOMEW: Thanks. I'd like to take us back

to the question before this one or the issue before this one, which is aircraft carriers, and why do you think that China seems to be so intent on developing aircraft carriers when all that we've heard is that aircraft carriers are not particularly useful for the Chinese?

MR. O'ROURKE: I would give you a couple different elements of an answer to that. I think it's fair to argue that they're not necessarily useful to the Chinese in Taiwan-related scenarios because Taiwan is within range of land-based Chinese aircraft.

Aircraft carriers may be more useful to China for operations that are more distantly beyond the immediate Taiwan geographic region, and they may be useful to China not only for limited power projection operations, especially those where the United States might not somehow be involved, but they are also very useful in a political sense.

Aircraft carriers are widely recognized by many people around the world as a symbol, rightly or not, of major world power status, and so if you are of the belief that many other people around the world think that, then that would be one way to pursue your goal of emerging as a major regional power and beyond that as a major world power.

But aircraft carriers are also useful for a variety of operations other than combat operations. They can be used for humanitarian assistance and disaster relief operations. We used an aircraft carrier for exactly that purpose following the tsunami in the Indian Ocean.

They can be used for noncombatant evacuations. They can be used for engagement purposes. So although we tend to think of aircraft carriers classically as being involved in major combat operations, they are highly flexible platforms that can be used for a range of combat and noncombat operations, and so my sense is that a significant part of the operational reason why Chinese leaders might want to procure aircraft carriers is for their non-combat operational potential as much as for their combat operational potential.

CHAIRMAN BARTHOLOMEW: Thank you.

Mr. Fisher.

MR. FISHER: Commissioner, Madam Chairman, I think that an important rationale for the earlier aircraft carrier program is to support their new SSBNs.

If one looks at the Varyag, the Varyag was designed for a very specific Soviet mission. It was not designed to project Soviet influence far. It was designed to fit into a phalanx of air, ship, and submarine missile launching platforms operating together to secure an area of sea to make that area of sea safe for Soviet SSBNs.

And the first two Varyag carriers, if that's what they indeed produce, will likely be tied to that mission, but still be very useful in terms of the range of secondary and other combat missions that Ron

mentioned.

CHAIRMAN BARTHOLOMEW: All right. Thank you.

VICE CHAIRMAN WORTZEL: Gentlemen, I want to thank you very much for your time and the knowledge that you've passed along to us.

We have a statement submitted for the record from Senator Webb since he will not be able to be here today. I think we still expect Senator John Warner to be here.

I'm going to at least read part of Senator Webb's statement, and then we'll take a break and wait for Senator Warner.

Senator Webb says that:

"With China's growing economic and military power and its willingness to use it, I see a real challenge for the United States in maintaining its strategic presence in Asia.

The United States is fundamentally a naval power and an Asian nation, and we must develop a long-term comprehensive strategy to protect our legitimate security interests in the region."

And he goes on to say:

"That the harassment of the United States Naval Ship Impeccable this past March is only one example of a growing assertiveness in the Chinese Navy. If you look at such events as this, over the past three decades, you will see an incremental encroachment into the South China Sea as intended to intimidate smaller countries such as Vietnam and the Philippines that also claim territory and continental shelf rights in such places as the Spratly and Paracel Islands.

You shouldn't view these as singular tactical events, but a concerted, calculated effort by the Chinese Communist Party and its military to enlarge China's strategic space."

He also says: "In taking a long-term view, the United States should demonstrate its willingness to respond to such pressures, just as clearly as it has in recent decades demonstrated its willingness to defend and operate within the Taiwan Strait, and that in order to do so, the United States must be prepared militarily and diplomatically to engage in increasingly self-confident PLA Navy."

He commends the Commission for its work and thanks us for the hearings and looks forward to its findings.

COMMISSIONER MULLOY: Mr. Chairman, there is one other line.

VICE CHAIRMAN WORTZEL: If I missed it, you read it, Pat.

COMMISSIONER MULLOY: The Senator also says: "We need to ensure that while the U.S. government pursues deeper engagement in China, we do not do so at the expense of our own security and interests in the broader Asia-Pacific region."

VICE CHAIRMAN WORTZEL: I thank you for that. I thank all

of you.

We're going to take a break here and please remain close enough that when Senator Warner gets here, we can reconvene.

[Whereupon, a short recess was taken.]

PANEL V: VIEWS OF FORMER SECRETARY OF THE NAVY

HEARING COCHAIR VIDENIEKS: Good afternoon, Senator.

SENATOR WARNER: Good afternoon.

HEARING COCHAIR VIDENIEKS: Looks like the weather cooperated somewhat.

SENATOR WARNER: It did indeed. Although being a gardener and a former farmer, I must say that we've been fortunate to get moisture which has been lacking in this area for a very long period of time.

HEARING COCHAIR VIDENIEKS: I still farm a little bit, and, you know, it's, the grass is growing.

SENATOR WARNER: Well, you'll make two hay crops this year. Now that's not all bad.

HEARING COCHAIR VIDENIEKS: Well, but apparently the market is down because of the crisis. There are not as many horse people around anymore.

But let me read a brief statement about you before you begin. Our final panel today is a special panel. We are delighted to welcome former Senator John Warner, KBE, who will provide his views as a former Secretary of the Navy.

Before joining the Senate in 1978, Senator Warner served as Under Secretary of the Navy from 1969 to 1972, and as the 61st Secretary of the Navy from 1972 to 1974.

Senator Warner served on the Senate Armed Services Committee for 30 years and was privileged to be elected by the members as Chairman or Ranking Member during 15 of those years.

He served in the Senate until January 3, 2009, completing a full five terms. On December 12, 2008, the Office of the Director of National Intelligence awarded Senator Warner the first ever National Intelligence Distinguished Public Service Medal. On January 8, 2009, the Secretary of the Navy announced it would name the next Virginia class submarine after John Warner. The USS John Warner, SSN-785, will be the 12th Virginia class submarine.

Queen Elizabeth II has named the Senator as an honorary Knight Commander for his work strengthening the American-British military alliance.

SENATOR WARNER: Thank you.

And if I might ask the chair if I could just take the oath.

VICE CHAIRMAN WORTZEL: Senator, I will be pleased to do that. I want to thank you for your service in the Navy and in the Marine Corps, as Secretary of the Navy, and in the Senate.

[Oath administered to Senator Warner by Vice Chairman Wortzel.]

VICE CHAIRMAN WORTZEL: Thank you, sir.

STATEMENT OF SENATOR JOHN WARNER, KBE

SENATOR WARNER: And thanks to the good offices of my dear valued friend, Senator Byrd of West Virginia. First, it was his vision that brought about this committee in many ways. I remember the formation and participated slightly in it.

But the current status of the laws which both federal law and Senate rules are very clear with regard to an individual when you depart the Senate and complete your service, and I want to remain in strict compliance with those laws, and with the assistance of Senator Byrd's office, we made the straightforward, routine, no preference inquiry to the Senate Ethics Committee, and they replied in writing that I could testify before this committee, and I do so of a free will and without any representing the views of any others. They're my own personal professional views.

I thank, first, each of you for undertaking this important subject of analyzing in a broad perspective the relationships between the United States and China. I don't claim to be a China expert although I must say that I enjoyed a trip with Senator Byrd to China. He was the head of a CODEL some years ago, and I've since been back on occasion.

And I think it's very important for the United States of America to seek the options by which there can be commonality between the two countries. You need only look at the trade balance, only need to look at the fact that China and its entities hold a considerable amount of the debt structure of this country, and I think we have to recognize--and that's really why I was so pleased to get this invitation--we have to recognize that China is not only economically growing, but it is politically growing, and becoming more important in that region.

This nation has aligned with China to resolve problems and bring about resolutions which is in the common interests, not just of the United States or China, but indeed the region. I point out the extraordinary circumstances surrounding North Korea. That is a very challenging situation in terms of, first, not only the security of the United States but the security of the region, and that implicates China.

The Six-Party Talks seemed for awhile were being successful. I

think an honest effort was made by all of the participants including China in the Six-Party Talks. They didn't bring about the results that were hoped, but I do hope under the leadership of President Obama and Secretary Clinton and Secretary Gates and others, that we can continuously work towards solutions on the Korean Peninsula, and I think China is going to be instrumental in such resolution of the problems as can be achieved. That's my own view.

I take a personal interest in that peninsula. I served in the Marines in Korea in 1951-1952. I was a ground officer, but a communications officer with the First Marine Air Wing, and I look back on that chapter of history with great sense of pride of having had a modest contribution as a first lieutenant, but I also constantly remember those colleagues, fellow Marines, who didn't come back from that theater.

As a matter of fact, when I was chairman of the Armed Services Committee, I saw that there was a small memorial put up to my squadron commander who lost his life over there, and also it reflects the feelings of those of us who served on behalf of the families of those others who didn't survive that very serious conflict.

So, of course, China entered that conflict in an adversarial role as we all know, but time has passed, and now we must look at the positive means by which we can work.

Now, I want to specifically raise the subject, and I would be happy to then entertain such questions as you have.

I went to the Pentagon, as was mentioned, as Under Secretary in February 1969. And it was soon recognized that we were experiencing a very serious situation as it related to the operation of our surface Navy and air Navy, not sub-surface, just surface and air Navy, on and over the high seas of the world. Understandably, both nations wanted to acquire from the other as much intelligence as they could.

But regrettably, there were incidents where ships collided, incidents where airplanes literally scraped each other in flight, and there came judgment in the Nixon administration in roughly 1970 to '71, that we'd have to sit down and determine a common basis by which we could recognize a nation's right over international waters to operate on the surface and in the air, but at the same time to do so in a way that does not bring about physical or property damage to the other.

It was quite interesting. It took some time for both sides to come to that decision because I would say most respectfully that period of the Cold War was extremely intense and the feelings on both sides were extraordinary.

Nevertheless, this country forged ahead with several very important treaties, SALT I, ABM Treaty, and others, and it was decided that at the same time, contemporaneously with working on

those treaties, we would start a colloquy, a discussion level between the Soviet Navy and the United States Navy, to determine whether or not there was enough incentive to move forward and start formal negotiations.

Well, it did come to pass, and the two nations did agree. Henry Kissinger was the National Security Advisor at that time. Bill Rogers was Secretary of State. I had known him when he was Attorney General, and I had gotten to know Dr. Kissinger in my work in the Pentagon.

And I was called in by the Secretary of Defense, and at that time I was asked if I would consider undertaking this responsibility in addition to my others in the Navy Secretariat, and I readily acceded to that.

I then underwent a very intense course of about I think it was almost 90 or 120 days of studying the Soviet Union and the Warsaw Pact. I had never been to Russia. I had traveled to certain areas of the Warsaw Pact, but they wanted me to fully understand the culture of those regions and the history of those regions before undertaking these talks because very few, if any, and I think I've heard it said I may have been the only one that, in a position where I possessed sensitive knowledge with all clearances in the Pentagon at that time, and full knowledge of the operation of, classified knowledge of the operations of the Soviet Navy, whether it's sub-surface, surface or air.

And there was a certain amount of risk for me and others to go into Soviet Union. But anyway, it was a fascinating course, and I was tutored by several what we call real old skilled diplomatic warriors who had worked with the Soviet Union for many years, and it was a fascinating experience to go through this course of teaching.

I actually went and visited each of the Warsaw Pact countries in, frankly, old clothes, being escorted by the CIA station chiefs or the DIA station chiefs, just so I could get an understanding because they said the manner in which the Soviets negotiate is quite unusual.

And you better learn how to take a sip of vodka and hold it, and spend hours upon hours just listening. So anyway put that behind.

It did come to pass and in over a period of two years of negotiations we sat down, and I brought this book with me to give to the committee. I presume it can still be obtained, but to make it simple for you, this is my copy, and when you're through, I'd appreciate the return of it, but it's written by a very interesting man, David Winkler, who is a professional writer, and been commissioned by the Defense Department and Navy Department to write various aspects of military history.

And it sets out the whole history of our negotiations, and on the front page is a picture. And now it's quite interesting--this morning I

was privileged to join the Chairman of the Joint Chiefs of Staff, Admiral Mullen, and the two of us spoke at the graduation of the National Defense University classes right there in front of Roosevelt Hall, and this picture was taken in about 1971 in the top conference room of Roosevelt Hall, and there sits a rather a nice-looking dark-haired man--no longer dark hair, yours truly, and I'm seated next to the Vice Chief of the Soviet Navy. And behind us are several admirals of the Soviet Navy, several captains, and on the left-hand side behind me are standing Herbert Okun, who was a professional diplomat assigned by Secretary Rogers, and several of the admirals that had worked with me.

One of them is very special to me and always will, and that's Tom Hayward. He's wearing a Rear Admiral stripe then because he had just been promoted. He was my EA, that's executive assistant, as Secretary of the Navy, and had just fleeted up, but he finished up these negotiations with me.

Now that agreement came into effect, and all the details are in here, and it has been carefully followed through all those years, in the ensuing years, by, first, of course, the Soviet naval forces and then subsequently by the Russian Navy, as well as our Navy.

Now one of the keys to this was the fact that at least once a year, this group, although without the principals primarily, but flag officers and others, would sit down and review all of the situations that preceded in the past year and determine whether or not there was compliance with the spirit and indeed the letter of the executive agreement, and what improvements could be made.

So it's a living document, and, more significantly, it avoided, it really, it almost totally was successful in avoiding any incidents of a magnitude of seriousness that could have been a tripwire to starting a more serious confrontation between the Soviet Union and the United States.

The other thing about this agreement is that other nations saw the virtue in it and began to use it as a model and copy it, and there's a number of such agreements, bilateral, some multilateral, among the naval powers throughout the world with regard to their own operating spaces.

So why do I come before this Commission? Because I think this Commission is one of the appropriate authorities that should go back and study this history. Overlay the facts of today and determine whether or not in the recommendations of your reports to Congress, that the current administration should be urged to take a look at.

Maybe it isn't exactly what can be achieved, but to take a look, because we did have some serious interests. Two instances here--one several years ago which you know full well about when we had that

very serious encounter between one of our EP-3 aircraft and a Chinese aircraft, and that, of course, resulted sorrowfully and regrettably in the loss of life of the Chinese pilot.

But I want to take some notes here that I have made, and attribute some of my remarks to Mr. Winkler. I spoke with him about a little bit of an update because Canada took this book, a publisher in Canada, and amended it and printed it, and I'm going to also submit to the committee a little chapter here on the other nations of the world that have taken this book, like Canada, and worked out some of their own agreements.

I'll get to that momentarily, but let's go back to what happened here on the eighth of March 2009. A number of Chinese vessels, three, four or five, whatever the number might have been, harassed one of our ships, the Impeccable, as she was operating in international waters about 75 miles south of Hainan Island.

And in a series of dangerous maneuvers, the Chinese vessels, we allege, shouldered--that's a naval term of where you go up and you're so close--you may not have contact--but you're so close to another operating vessel, that that operating vessel has to alter course and speed in order to avoid physical contact.

So that was taking place, and it was instigated, according to this, the reports, by the Chinese vessels. Now, the crew of the Impeccable fended off one of the vessels that approached within a space of 25 feet, and then the preceding days, our ship, the Impeccable, and another surveillance ship, the Victorious, had drawn the attention of Chinese naval vessels and flying aircraft, and in one case, the Chinese Bureau of Fisheries patrol vessel illuminated the bridge of the Victorious. Now that's something that you don't do at sea because it has the effect of blinding the operators that are operating that vessel.

In response, the United States protested these actions, and the U.S. Navy deployed its destroyer, the Chung-Hoon, to assure the USSN ships they remain unmolested. There's much more about that incident, and perhaps you have it already as a part of your record of this hearing or previous hearings. But preceding that, of course, was the incident of the two aircraft that I mentioned earlier.

I'd like to read another excerpt from some of the work that was prepared by this author. Throughout the 1960s, the two nations--that is--we're now back to the Soviet Union and the United States--exchanged numerous protests, notes complaining of actions of the others in maritime forces. Beginning in '68, the United States began overtures to discuss, quote, "safety at sea."

In November of 1970, following the collision of a Soviet destroyer, HMS Ark Royal--that's a British ship--the Soviets responded. After negotiations conducted in Moscow in October '71

and in Washington in early May '72--that's a picture of when we went to war college--the Agreement for the Prevention of Incidents at Sea was signed in Moscow on the 25th day of May 1972 by Secretary of the Navy John Warner and the Soviet Navy's top admiral, the Chief of their Naval Staff, Admiral Sergey Gorshkov, one of the most fascinating men I've ever known in my life.

A legacy of the 1972 Nixon-Brezhnev Summit Accord remains in effect and has served as a model for confidence-building measures.

In the case of the People's Republic of China, on 19 January 1998, the United States signed an agreement with this nation establishing consultation mechanism for strengthening military maritime safety.

The United States avoided using the title "incidents at sea" for this accord because the term had Cold War connotations inappropriate for the relationship as it was then between the United States and China.

Unfortunately, the 1998 Chinese-American accord lacked the communication mechanisms that had made the '72 American-Soviet-Russian accord an effective regime for 37 years. I explained how each year, they meet. Given the majority of that period is now post-Cold War, perhaps a U.S.-China incidents of sea agreement based on the U.S.-Soviet model would be possibly timely to look at.

And I suppose that's why I have had the pleasure of accepting your invitation to come down today and talk about it. Again, I will leave this for the record, but this is rather interesting. It was written here a short time ago by the Center for Foreign Policy Studies at a university in Canada, and it's called sort of a Preventing the Incidents. It's the same thing.

And this writes in its forward:

After the first edition of this book--the one I have here--the prevailing global security paradigm involved Cold War to New World order with risks of unanticipated naval mishaps at seas not only undiminished but multiplied and diversified. In other words, in other areas of the world, it spread.

Meanwhile the INCSEA concept has continued to provide an inspiration and catalyst for a variety of risk management arrangements, especially in Asia. And it recounts the following:

Less than a year after the first edition was published, a mid-air collision between a U.S. Navy EP-3 recon plane and a Chinese F-8 fighter resulted in the death of the Chinese pilot and the embarrassing internment of 24 American crew members following an emergency landing at an airbase in Hainan, China of our plane.

After a tense period of apology diplomacy, the crew and somewhat later the aircraft, which had been carefully scrutinized by

the Chinese, of course, was released after the U.S. Ambassador in Beijing presented a letter saying the President of the United States and the Secretary of State were, quote, "sorry" for the loss of the pilot, admitting that the EP-3, our plane, entered Chinese airspace and landed without verbal clearance.

President and Secretary of State then emphasized publicly that this did not imply an acknowledgement of U.S. fault. Meanwhile, the incident had created a political storm on both sides of the Pacific.

I just mention that because we have so much at stake in this world today. It's a troubled world, be it North Korea or other areas, and it's important that major military powers, and we must recognize that China is a major and growing military power. I'm sure the testimony today outlined that in some detail.

So it seems to me that there exists out there these tripwires, and we've seen two, that can provoke a confrontation which just begins to dislodge such positive measures as may have been accomplished in other areas prior to the incidents.

And I think it would, you know, the Soviet Union, it's rather interesting. In studying that situation that was I privileged to be a part of, they wanted safety at sea, they saw the value in removing these tripwire things, but also they wanted the fact that the recognition of sitting down across the table on an equal basis, nation-to-nation, to solve a military potential situation.

Although the Soviet fleet, its combined ships and aircraft were very significant at that time, and I'm sure you can find the numbers in comparison to the fleet we had, it was a significant navy. It had grown under the tutelage of this extraordinary man, the Chief of Naval Operations, who had had that position for a quarter of a century, building that navy up.

And they wanted the recognition. They were going to sit down with the most recognizable, strongest navy in the world, namely the United States Navy, and show on a common basis how on a professional standing, navy to navy, we could put aside differences, put in place a regime for navigation and conduct of these military platforms, be they air or surface, throughout the international waters, and do it in a manner that would avoid incidences.

And I'm proud to say, and I don't take credit myself--I've had a role in it--but really it was successive generations of the United States Navy and the Soviet Navy working together that made it work, and I just think in these tense times, our administration should take a look and see whether or not a comparable situation can be arrived at with China.

And with that, I thank the committee for its careful attention and perhaps I can answer a question or two. I'll give it my best shot.

Panel V: Discussion, Questions and Answers

VICE CHAIRMAN WORTZEL: Senator, thank you very much.

You may have given us a road ahead with calling it unintended naval mishaps at sea. I don't know if you know, I've been on two occasions, the military attache at the American Embassy in China. I've been present--

SENATOR WARNER: You were attache in which embassy?

VICE CHAIRMAN WORTZEL: The American Embassy. I was a U.S. Army Attache out in China.

SENATOR WARNER: In China?

VICE CHAIRMAN WORTZEL: In China.

SENATOR WARNER: Well, then, you draw on an enormous background.

VICE CHAIRMAN WORTZEL: And the Chief of Naval Operations, the U.S. Chief of Naval Operations, the U.S. Secretary of Defense, and the Chairman of the Joint Chiefs of Staff, while I was present have raised the idea of an agreement on military incidents at sea with the Chinese Minister of Defense.

And in each case, the Chinese rejected it saying they didn't want to do anything that was in a Cold War framework like the United States did with the Soviet Union, so perhaps calling it "unintended naval mishaps" takes it out of that framework. And that can be tried.

But I wanted to ask you, do you attribute your ability to conclude that kind of an agreement with the Soviets to the fact that the President of the United States made this a priority? Because we haven't had that kind of attention to it in the past.

SENATOR WARNER: Well, I want to be very careful in giving a response, but, first, I would say there has been on a military-to-military some conscientious overtures, sanctioned presumably by the National Security Council of previous presidents. I think currently the Chief of Naval Operation, and I think perhaps you had testimony today from a naval witness. I don't know.

VICE CHAIRMAN WORTZEL: No, we did not.

SENATOR WARNER: Anyway, I think you could inquire. I think the Navy would be forthcoming to this committee to give us details as they feel they could share, but Admiral Roughead has, I think, made some interesting overtures in this area, but I leave it to him to speak.

But back to that time frame, we had sort of the impetus of moving forward on two very, very significant treaties, and that sort of paved the way. I remember that these talks with the Soviets, the Navy talks would stall out for periods of time, and we just decided we

wouldn't schedule a meeting, and then certain circumstances would occur and gave rise to bringing the meeting back on to the table again.

I made several trips to the Soviet Union, very interesting trips, and they made the one trip over here. It was a big decision to bring them over here. I remember very well, if I can inject a little humor, during this meeting that this picture captured prior to the signing and so forth, the Admiral, he said to me, through a translator, he said I need a breath of fresh air.

I said, well, then, perhaps we can go out and find it. Well, now, he was dressed in a full four-star admiral's uniform, and as you possibly remember, the Soviets, the decorations would start at about the shoulder. You remember that. And they would go all the way down to the belt, and it's interesting, some of their decorations, unlike ours, for instance, if an individual gets a Legion of Merit, for example, you get the ribbon. But if you get a second Legion of Merit, you get a star to go on the ribbon.

Oh, no, they put ribbon on for the first one and a ribbon on for the second one, and the same ribbon, they have a row of these identical ribbons. But, anyway, you could imagine on that military installation at Fort McNair, people seeing me walking along with this full admiral and all his stripes and stars on him and ribbons, it would cause quite a stir over there.

But it worked, and I do believe that the fact that it was reviewed certainly by the National Security Council. My primary contacts were with Dr. Kissinger although I knew the President. I had worked for him in years previous because he appointed me as Secretary of the Navy. But he was pleased that it came about.

So clearly, it seems to me that this administration has got to be given a period of time within which to establish what its approach will be to China. So far as I know--and I've met the Ambassador designee--he's a very accomplished professional and a very fine public servant and with a family that had ties to that region, and I think he'll make a superb ambassador. I guess I shouldn't be talking like that. I'm over my--I don't want to get beyond my--I'm not trying to influence Congress. Hey, I'll back off. But I can have my personal opinion. He'll be an excellent--he was an excellent choice.

But we've got to give our country time to figure out exactly how they're going to begin to work with China to resolve such common set of problems and things, and so in due course, this could be an option.

VICE CHAIRMAN WORTZEL: Thank you.

CHAIRMAN BARTHOLOMEW: Senator Warner, I just want to join my colleagues in thanking you very much for coming today, and we know you have lots of things to do with your time and lots of options as to what to do, so we really appreciate your coming and

sharing your expertise. It's a very interesting idea.

One of the significant differences, as I look at the U.S.-China relationship now versus the U.S.-Soviet relationship at the time that you all were working on these, is the extent of the economics, the economic relationship and the economic integration that takes place, that I think for many reasons it almost sounds like wanting to put something together to avoid these kinds of mishaps would definitely be in both parties' interests.

But I wonder if the Chinese government, for example, might have decided that it has all of the levers that it needs on the economics front and might not be as interested on the military front? I just, I'm not sure how the dynamics work out.

But it's a very interesting idea, and again, I just really thank you for coming and sharing. Certainly it's something that we'll explore as a potential recommendation that we can make.

SENATOR WARNER: Well, I'll venture an opinion. There is some, and obviously there are people on the dais here and others behind me probably know a lot more about China than I do. I readily concede that I'm not an expert. But in that part of the world, be it China or Korea, in my travels through those regions, there's sort of the unwritten importance of face saving.

They're very proud people in that part of the world, and they're very loyal and strong in their allegiance to their countries and proud of their countries. I would think that given that China is emerging again as a significant military, we can only judge capabilities, and a lot of those capabilities, are of course, classified--I wouldn't touch that--but obviously we know of capabilities which are not classified. It's clearly there.

But you can never really analyze intentions, and of course intentions change with the people who are in authority to exercise decisions over the utilization of those capabilities.

But it would seem to me that their present military status in the world, they would want to be recognized as doing what they can to eliminate tripwire situations that could precipitate confrontations which really bring about good for neither side.

VICE CHAIRMAN WORTZEL: Thank you.

COMMISSIONER MULLOY: Senator, thank you for being here. I first met you in 1972. I was a young foreign service officer working on the Law of the Sea Conference.

SENATOR WARNER: Oh, yes.

COMMISSIONER MULLOY: And I was in a meeting with you when you were Secretary of the Navy. I then became a constituent.

SENATOR WARNER: We met in Geneva then.

COMMISSIONER MULLOY: No, I think it was over in the State

Department. You came to a meeting. I remember that.

SENATOR WARNER: Yes. The talks were in Geneva, which was a beautiful place.

COMMISSIONER MULLOY: Right.

SENATOR WARNER: Sharp contrast to Moscow.

COMMISSIONER MULLOY: But in '79, I moved into Alexandria and I've been a constituent of yours for 30 years.

SENATOR WARNER: Thank you.

COMMISSIONER MULLOY: I had the great good fortune of serving 15 years on the staff of the Senate Banking Committee under Senators Proxmire, Riegle and Sarbanes and Dodd. So that was a great period of life.

SENATOR WARNER: I remember them all very well.

COMMISSIONER MULLOY: I have two questions on which I would like your judgment based on your own expertise and something you said earlier. We had testimony today from Peter Dutton, who is an Associate Professor at the Naval War College, and he talked about the exclusive economic zone and the dispute between the U.S. and China.

But he still recommended that the United States ratify the Law of the Sea Convention. What is your judgment on that? Do you agree with that recommendation, that the United States should move forward and ratify the Law of the Sea Convention?

SENATOR WARNER: Well, I've got to be careful because I'm precluded from trying to make any statements.

COMMISSIONER MULLOY: Okay.

SENATOR WARNER: But, no, I'll answer it in this way because they're a matter of public record so I can't comment on what--I can't say anything that would try in any way be interpreted as trying to influence the Congress.

But when I was here as a Senator, I did speak out favorably on behalf of the need to give a fair examination and a good and thorough, fair floor debate on the Law of the Sea.

I worked on it, and Admiral Jim Watkins--I don't know if you know him or not. He was former Chief of Naval Operations, a very dear and valued friend. And I think we may have testified together somewhere on that, but he was a great proponent of that moving forward.

It seems to me that there are distinct advantages, and I so stated when I was in this body, and it's a matter of public record. It seems to me the advantages outweigh such disadvantages that there may be with regard to that treaty.

So I can only speak to what I said at that time. I won't try and bring it up to date.

COMMISSIONER MULLOY: Thank you for your opinion.

Now, on your recommendation about this trying to get some agreement on incidents at sea or whatever we want to call it--

SENATOR WARNER: Well, my recommendation is the matter should be explored--

COMMISSIONER MULLOY: Yes.

SENATOR WARNER: --by people who have access to information and other more current data that I simply don't have. I urge that it be considered.

I have to know all of the facts as to whether I would say we have now considered, let's take the next step forward and execute. So I'm not prepared to take that until I know more about what are all the facts and what's the reciprocal representations by China.

COMMISSIONER MULLOY: Thank you. That's very helpful.

One last point. I believe in your testimony, you talk about the trading relationship and the fact that the Chinese helped finance our debt. Do you think it was imprudent for--

SENATOR WARNER: It's a fact of the matter they bought it for their own reasons. It's a safe investment.

COMMISSIONER MULLOY: Do you think it was imprudent for us to get in a situation where the Chinese own so much of our national debt?

SENATOR WARNER: I'm not that much of an expert to give you an informed answer to that. I can only speak to what is the published data and facts which is there for the public to see. It's significant. And I won't try and go beyond that as far as updating.

COMMISSIONER MULLOY: Thank you, and as one of our constituents for always making us proud of your service.

SENATOR WARNER: Well, it's been really a marvelous career, and I enjoyed it tremendously.

VICE CHAIRMAN WORTZEL: Senator, thank you very much for your time.

SENATOR WARNER: Thank you.

VICE CHAIRMAN WORTZEL: And thank you for sharing your experience and wisdom with us. It has been very helpful to us, and again thank you for your service to the nation, sir.

SENATOR WARNER: Thank you.

Good day, gentlemen. Good day, ladies.

[Whereupon, at 4:50 p.m., the hearing was adjourned.]

ADDITIONAL MATERIAL SUPPLIED FOR THE RECORD

Statement of Jim Webb, a U.S. Senator from the State of Virginia

COMMITTEE ON
ARMED SERVICES
COMMITTEE ON
FOREIGN RELATIONSCOMMITTEE ON
VETERANS' AFFAIRS

JOINT ECONOMIC COMMITTEE

United States Senate

WASHINGTON, DC 20510-4605

Statement of Senator Jim Webb, D-VA
U.S.-China Economic and Security Review Commission
Hearing on "The Implications of China's Naval Modernization
for the United States"
June 11, 2009

Chairman Bartholomew, Vice Chairman Wortzel, hearing co-chair Commissioner Videnieks and other distinguished Commissioners, I regret that I could not be at the hearing with you today. However, given the importance of this issue, I wanted to submit this statement, and commend you for examining the implications of the People's Liberation Army's naval modernization in China. With China's growing economic and military power and its willingness to use it, I see a real challenge for the United States in maintaining its strategic presence in Asia. The United States is fundamentally a naval power and an Asian nation, and we must develop a long-term comprehensive strategy to protect our legitimate security interests in the region.

For more than twenty years, I have been a keen observer of China's military modernization, in particular its naval developments. The harassment of the *USNS Impeccable* this past March is only one example of a growing assertiveness in the Chinese navy. If you look at events such as this over the past three decades, you will see an incremental encroachment into the South China Sea that is intended to intimidate smaller countries, such as Vietnam and the Philippines, that also claim territory and continental shelf rights in such places as the Spratly Islands and Paracel Islands. We need to view these activities not as singular, tactical events, but as a concerted, calculated effort by the Chinese Communist Party and its military to enlarge China's strategic space in the region.

When China challenges the freedom of passage rights of U.S. surveillance aircraft or ships in the South China Sea, it impacts not only U.S.-China relations, but also regional and global security. China is laying claim to maritime territories along vital sea routes in the region—areas that are also believed to have significant oil and gas deposits. By using the PLA Navy to assert these claims, China is taking its territorial disputes beyond a legal or diplomatic debate by demonstrating a willingness to assert its claims through the use of military intimidation. In taking a long-term view, the United States should demonstrate its willingness to respond to such pressures, just as clearly as it has in recent decades demonstrated its willingness to defend, and operate within, the Taiwan Strait. In order to do so, we must be prepared militarily and diplomatically to engage an increasingly self-confident PLA Navy in this region.

I commend the Commission for investigating these issues and reporting to the Congress its recommendations for improving U.S. security and diplomacy in Asia. We need to ensure that while the U.S. government pursues deeper engagement in China, we do not do so at the expense of our own security and interests in the broader Asia Pacific region. Thank you, and I look forward to the findings of this hearing.