

Excerpts – Dr. Andrew Erickson – Hearing on China’s Military Modernization and Its Impact on the United States and the Asia-Pacific, March 29, 2007.

DR. ERICKSON: Chairman Bartholomew, Vice Chairman Blumenthal, Commissioners Reinsch and Wortzel, thank you very much for this opportunity to discuss with you today the very important topic of China's military modernization.

I must give substantial credit to my fellow scholars at the Naval War College's China Maritime Studies Institute, CMSI, especially Director Lyle Goldstein and Professor William Murray. With your permission, I would like to submit for the record a small amount of our collaborative research concerning China's naval modernization, which draws extensively on Chinese language sources.

Finally, let me emphasize that everything I'm about to say, as you well know, represents my personal opinion as a scholar and should be in no way construed to represent the policy or estimates of the U.S. Naval War College, the U.S. Navy or any other element of the U.S. government.

You asked me to comment on China's ability to conduct joint warfare. There is little doubt that the People's Liberation Army realizes that conducting joint warfare is a critical element of conducting limited local wars under high tech conditions.

The PLA has observed the U.S. closely, particularly in Operations Desert Storm/Desert Shield and Operation Iraqi Freedom, and recognizes the need to improve its joint capabilities. The question

of how good the PLA is at conducting joint warfare, however, is difficult to answer. We see some indications that PLA exercises are moving towards jointness, but our research has not yet revealed how successful the PLA has been in actually accomplishing these goals.

There is also no doubt that the PLA is fully committed to being able to dominate the battle space of the littorals around China with an intense focus on the waters and area around Taiwan. Everything the PLA is developing, with the exception of its ICBM force, ballistic missile submarines, and perhaps its nuclear powered submarines and landing platform dock, seems to be devoted to this cause in our estimation.

Some of the PLA's more modern ships and aircraft will allow it to extend its combat power slightly further into the South China Sea and, to a limited extent, into parts of the Western Pacific.

As you know, the PLA Navy is also capable of sending some limited number of warships on occasional trips across oceans. These deployments, however, are severely limited by the limited number of replenishment vessels. While China's shipyards are fully capable of building vessels that could perform those replenishment operations, such ships apparently are not currently being built.

This suggests to us that at least for the time being, China is limiting its military, particularly its naval, focus to matters closer to home.

Thus, China's power projection capabilities seem to be focused

on the Taiwan contingency. There is little evidence to show that the PLAN is developing the capabilities necessary to extend its ability to project power, at least as the U.S. would conceive of it, much beyond China's claimed territorial waters and those environs.

Granted, it's important to emphasize that PLAN ships carry sophisticated long-range anti-ship cruise missiles, and some of their aircraft can carry land attack cruise missiles as well. Their newest SSNs might be similarly equipped. But the PLAN does not have the capability, in our view, at present to deploy to distant areas and establish a sanctuary on the ocean from which it can conduct military strikes against opposing navies or targets on shore.

The PLA has recognized this overall naval weakness in air defense and surface warfare and has taken impressive steps to overcome these problems. China's three most recent classes of surface combatants all have sophisticated air search and missile guidance radars and also are said to have the advanced long-range surface-to-air missiles to afford these ships a respectable area air defense capability.

Thus, the Luyang II destroyers, hulls 170 and 171, carry the HHQ-9 SAM, the two Luzhou-class destroyers have a marinized SA-20 SAM, and now the five Jiangkai II frigates have vertical launch cells and phased array and guidance radars that strongly suggest a similar capability to us.

China continues to devote substantial efforts to its submarine force. Our book, *China's Future Nuclear Submarine Force*, if you'll

forgive me--

[Laughter.]

DR. ERICKSON: --just published by Naval Institute Press, offers detailed information on this. China does not appear to have made significant progress in correcting its weakness in anti-submarine warfare, however. Although its newer large surface combatants can certainly carry helicopters and might, in fact, carry ASW helicopters, none appear to have modern hull-mounted or towed sonars. There is also little evidence that China is devoting much effort to developing planes equivalent to the U.S. P-3 maritime patrol aircraft.

We have recently completed a two-year-long study of over 1,000 Chinese language articles concerning naval mine warfare. With the help of the Commission it's been distributed outside, and I'd be happy to furnish more copies as well as updates as we continue this research.

Our three most important findings thus far are:

(1) China has a large inventory of naval mines, many of which are obsolete but still deadly, and somewhat more limited numbers of sophisticated modern mines, some of which are optimized to destroy enemy submarines;

(2) We think that China would rely on offensive mining in any Taiwan scenario;

(3) If China were able to employ these mines, and we think that they could, it would greatly hinder operations for an extended time in waters where the mines were thought to have been laid. The obvious

means of employing mines are through submarines and surface ships. We believe that the use of civilian assets should not be discounted, but we also see signs of Chinese recognition of the fact that aircraft offer the best means of quickly laying mines in significant quantity.

These aircraft would be useless, however, without air superiority. China's increasingly impressive conventional ballistic missile force and inventory of SAMs and advanced tactical aircraft, in our view, cast real doubts on Taiwan's ability to maintain air superiority over both the Taiwan Strait and even the island itself.

Regarding air-to-air combat, you are certainly aware of China's new J-10 aircraft and of the SU-27, SU-30 and J-11 aircraft programs. China recognizes that dominating the skies over Taiwan is a necessary precondition for successful coercion. These planes, and the weapons they carry, reflect that fact.

Although our group has not yet deeply examined that area, we are impressed by what we have seen thus far.

Every surface warship launched by China in the past decade, with the possible exception of the new LPD, carries sophisticated YJ series anti-ship cruise missiles. These missiles deserve a measure of respect, in our view. It is important to recall that a single Chinese-made C-802 anti-ship cruise missile, which is less capable than China's newer anti-ship cruise missiles, disabled Israel's Hanit Sa'ar 5-class missile boat in 2006 and killed four of Israel's sailors.

Additionally, the Houbai class, or 2208, wave-piercing

catamarans, which are based on an Australian ferry design, are an impressive anti-surface weapons system, high-speed, perhaps 45 knots or so, low-observability, and carrying two or four advanced cruise missiles.

China is building dozens of these vessels at many shipyards simultaneously. Although I am not an expert on surface warfare, I am told that these would be highly effective in attacking surface warships in the waters around China, but their limited endurance would not allow them to operate for extended periods at much greater distances.

Pictures of China's YJ-62, YJ-82 and YJ-83 anti-ship cruise missiles, as well as images of land attack cruise missiles, appear increasingly on the Internet. These missiles, according to *Jane's*, are all long-range, lethal and, most importantly perhaps, indigenously developed. China already has the SS-N-27 Klub supersonic anti-ship cruise missile, which it can launch from its eight newest Kilo submarines, and the formidable SS-N-22 Sunburn supersonic missile that it can and has fired from its four Sovremmeny class destroyers.

China is also thought to be in the process of developing anti-ship homing warheads for its ballistic missiles, which is a very worrisome development, in our view. If they work, they would be extremely difficult to defend against.

As for improvements in C4ISR capabilities, the PLA's obvious reliance on long-range cruise and ballistic missile systems strongly suggests that its leaders recognize the importance of robust C4ISR.

One must assume that they have programs in place to overcome, or at least significantly offset, this traditional weakness.

We have not yet performed dedicated research in this area, but it is certainly on our list of subjects to examine as we go forward.

Thank you very much for your time and I welcome your questions and comments.

Panel III: Discussion, Questions and Answers

HEARING COCHAIR WORTZEL: Thank you very much. A number of commissioners have questions of you. I appreciate very much your generosity with your time. Vice Chairman Blumenthal is first.

VICE CHAIRMAN BLUMENTHAL: Thank you very much to all of you. A question for General Cartwright and then if I have time for Mr. Cooper and Dr. Erickson.

The spectrum you described that you're seeing right now of cyber abilities and cyber attacks going from hackers all the way down to the use of nation state resources, what do you speculate or, not speculate, actually know that this type of cyber activity is aimed at, at this point, and what would you speculate it is going to be aimed at in the future?

Are we looking right now at probes of U.S. system that later will be able to take advantage of vulnerabilities or what are actually thinking the aim is here?

GENERAL CARTWRIGHT: My sense is that there is a substantial amount of reconnaissance going on to understand, in our terms map out, networks, understand who's talking to who, and what means are they using to communicate. And that is broader than just the U.S. government. I mean that is industry for this nation, and so that activity is ongoing.

When you do that type of activity, the opportunity to start to understand where the intellectual capital of a nation is and what it has put together to give you the chance to potentially skip generations in your R&D efforts, whatever, and this is not just military--this goes across the commercial sectors, et cetera--is usually availed.

For us, we generally think about things in terms of--and I'm talking about military--as a threshold is the law of armed conflict, and as long as you're willing to stay below that, you are probing around, you are looking for opportunity, you may stumble across opportunity, probably some of it serendipity when you're talking information operations. In fact, probably a large part of it is, but the idea is to get an understanding of the neighborhood.

The better you understand it, the more likely you are to be able to use that to your advantage should you decide to breach through the law of armed conflict, if we went into a conflict between us.

It may not seem like much to understand just basic rudimentary networks, but it starts to, for us it really reflects how we think, how we interact and who interacts with who, and understanding that about

your adversary is very important. And the speed at which we can understand that about our adversaries today, because of cyber, in comparison to the way we had to do it say in World War II or the Korean conflict for the United States is vastly different.

I mean you all know what a thumb drive can do in exfiltration in comparison to how many encounters in HUMINT. And so the scale at which you can operate in this environment is pretty significant.

So understanding the patterns and the interrelationships is one level of it. Understanding potentially where intellectual capital might be invested and how you might start to take advantage of that in an asymmetric way is a second thing, and then the third is to start to understand if we decide to breach through the law of armed conflict, I could then understand how my adversary is going to behave and potentially intercede and make it harder, find his seams, weak spots.

VICE CHAIRMAN BLUMENTHAL: Is a lot of armed conflict well developed in cyber warfare and have you seen, what you have a very good sense of when it was breached by an adversary?

GENERAL CARTWRIGHT: My feeling is that it is very analogous. In other words, you do not need to go out and develop a new law of armed conflict for cyber. You have sufficient analogy to other areas of conflict in the kinetic sense that you really don't need to do that (a); (b) you may need to do a slight interpretation, but I think it's well documented. It probably is best documented in comparing it to electronic warfare, what's appropriate, what's not.

Even if you don't intend to do harm and collateral damage, if you completely obscure the airspace, you have put at risk civil aviation, et cetera. You have gone through that threshold. It's not unlike that in this environment.

So I think you have good analogy in law and we may need to work a little bit on the nuances, but you have a good basis there.

VICE CHAIRMAN BLUMENTHAL: Thank you.

HEARING COCHAIR WORTZEL: General Cartwright, actually I appreciate your analogies. I'm an old SIGINTer, and in signals intelligence and electronic warfare, what you talked about, network mapping, we would call traffic analysis.

GENERAL CARTWRIGHT: Right.

HEARING COCHAIR WORTZEL: And it's the basis of any attack. I'm very interested in a couple of points you raised on PLA concerns about the development of missiles, about our own global strike concept, and this idea of laws of cyber conflict and laws around warfare.

In the Commission's annual report, we suggested that there should be a strategic dialogue between your command the People's Liberation Army about these issues and about issues of strategic verification. That hasn't happened yet.

So I would be interested in your views on whether it should--and the other panelists--and any hope you might have or even a schedule for that?

GENERAL CARTWRIGHT: When the president visited, there was I guess two dialogues that were set up. One was for Mike Griffin, my counterpart at NASA, to enter into a dialogue with China on space and that dialogue was to have him, the director, go to China and have an exchange and that did occur.

The second was for the second rocket--Second Artillery--I'm mixing my countries up here--the Second Artillery and STRATCOM to have an interaction. We have been in a dialogue to set that interaction up. I would say that one of the issues that Chinese are trying to work their way through is the organizations don't necessarily match up in mission, and so is that the right meeting or should they send someone else or should they send more than one person is something they've been trying to work their way through.

In addition, we went through the Fourth of July. We went through a test in North Korea. We've gone through several events which tend to, okay, let's wait a little bit here and make sure we understand what's going on.

So we just completed an activity where the Chairman, General Pace, went over and conducted a visit, hopefully to try to stimulate mil-to-mil conversations again. I think they're critical. They're critical from several different approaches.

One is being able to sit down military commander to military commander and understand your adversary and understand whether not you have a basis in dialogue that you can defuse something very

quickly with just a mere conversation, particularly when we have a lot of media that help us interpret what we say.

[Laughter.]

GENERAL CARTWRIGHT: And so sometimes it's quick to pick up the phone, get the opportunity, say, hey, this is really where I'm coming from, this is what I was trying to. Right now we are communicating, but it is through the track series of dialogues, which have been extremely valuable, but it is whispering in one person's ear and then to another person's and then back across, and it's a very slow way to do business, and it's not terribly efficient.

It's helpful, but it's not efficient. We need to move forward and start to find mil-to-mil dialogues that can start to work through some of the issues. We need to be able to, in particular, start to have a dialogue about ballistic missiles.

What's our intent? Where are we going? How do we find comfort? How do I know how to tell you that I'm uncomfortable with what you're doing? And for you to come back to me and say it's okay, this is where we're heading. If I don't go in the direction I just painted, you ought to be uncomfortable, but if I do, this is where we're going.

Just in the simple launch of a missile, if someone tells you where it was supposed to come from and where it is supposed to go, and you can assess that relatively quickly, it changes the whole dialogue between the two parties.

If the missile is launched and nobody knew it was going to be launched, and you have no idea where it's going, there is a period of ambiguity there that can be very disquieting.

And so I believe this is critical. We can't rush it, but the sooner that we can get a meaningful mil-to-mil dialogue going, the better.

HEARING COCHAIR WORTZEL: Thank you very much.
Chairman Bartholomew.

CHAIRMAN BARTHOLOMEW: Thank you. And thank you very much, gentlemen, for your very interesting testimony and also for your service to our nation over the years. It's benefitted us all and I always feel that it's a tremendous privilege for us to have people with your experience come and testify before us. So thank you very much.

I have kind of a broader picture question, which is there's obviously a debate going on about what China is, whether it's a strategic competitor, a friend, an ally, whatever, whatever, and we have defined this question over a number of years, that it's a little uncertain as to what that relationship is and within our own policy debate, there is no consensus other than China's big and it's growing and it's a country in Asia, and it has a permanent seat on the U.N. Security Council, and after that it all breaks down.

But my question is really about war planning when we don't necessarily have a clear picture of either what we think an outcome in some cases should be and if we don't have a clear picture of Chinese military campaign objectives. So if we're not clear of what we think

an outcome should be and we don't know, have enough information about what they think their military objectives should be or are, how do we do planning to counter any of these things?

I'll open that up to all of you.

GENERAL CARTWRIGHT: Okay. I think there's a couple of attributes that we can work our way through. We have some basic truths that apply across all of the domains of a desire for access, a desire to be able to move through any medium, whether it's air, space, cyber, land, and conduct commerce. You know really at the end of the day this nation's greatest national interest is to be able to conduct business.

And so to the extent that we might be inhibited from doing that would be a reason that we would view with concern activities, whether they hinder our ability to do passage in space and go out and discover and what not and do science, or whether it's in the business world, law of the sea, et cetera.

So if those areas are denied us, then what are appropriate responses, what plans should we lay in place and to some extent make transparent so that people understand what's important to us, and at what level we place the importance.

If we can do relatively generic planning, couple that with exercises which really then demonstrate the capabilities that we're willing to associate with a certain regret that we--or harm that we're doing, then they can view those, they can see. They can see that, okay,

if we do this they're going to send an aircraft carrier over.

If they send an aircraft carrier over, that sends a message to us that they're uncomfortable about something. That establishes thresholds. It allows us to plan. If we send an aircraft carrier over, as an example, one aircraft carrier is not going to take on China. Okay. But it sends a message. It changes the dynamic.

It starts to, for us, expand the warning time, which allows us to seek other venues rather than force to solve the problem. But increases the credibility of the fact that if we decide to use force, if that's appropriate, that we're already on a path to do that, and the amount of time to do it is now starting to be reduced.

And so you try to build scenarios that allow you to communicate in your planning, that communicate and are carried over into your exercises, that let you be relatively transparent about when you're uncomfortable and when you're not uncomfortable and what conditions make you uncomfortable, and to what extent you're willing to escalate in that situation.

The most difficult part of this equation is when you move to the nuclear end of the equation, and that is why it is so critical to get a dialogue going. For the Russians, for the Soviet Union when it was the Soviet Union, we had time and we had proximity and we used time and proximity to tell each other when we were uncomfortable. If your submarines got too close to my shoreline, if your bombers were end of the runway and loaded and running, those were signals that were very

clear and unambiguous, but it allowed a dialogue in actions that really facilitated alternative measures to solve the problem.

That to me is the type of planning that we want to be doing, but we want to do it with a mil-to-mil dialogue so there is no misinterpretation of the activity.

CHAIRMAN BARTHOLOMEW: And gentlemen, our other witnesses, if you have comments, maybe you can put them on the record. General Cartwright, I wanted to mention specifically, though, that one of the reasons I asked this question is because I have heard from some of our young military planners that they are doing, they believe that they are doing their best to try to come up with plans, but they are uncertain what the ultimate outcomes are supposed to be, and they feel like they are flying blind, if you will, in terms of what they're trying to plan for.

GENERAL CARTWRIGHT: Fair. All of us Type As would like to have it written down and, okay, there's exactly what my objective is. We are moving, though, to a strategy that allows us to address ambiguity in a much larger way. The new triad was to accept the fact that one-size-does-not-fit-all for our adversaries.

It also acknowledges the fact that our adversary is looking for our seams, and if we show them strength in one area, they'll move to another. So the same is true of the dialogue. It needs to be flexible enough to communicate at a large level, but acknowledge the fact that maybe it's cyber today and we start to build a little better defense. We

don't want to end up in nine-year-old soccer game where everybody is rushing to the ball and we're leaving huge amounts of the field exposed.

HEARING COCHAIR WORTZEL: Commissioner Brookes.

COMMISSIONER BROOKES: Thank you very much. Thank you all for your testimony today. I'm going to direct these questions, I think, to Dr. Erickson, but if others have input, I'd appreciate it.

I have two questions. One is this morning, one of our witnesses said that it was his belief that the Chinese were pursuing an aircraft carrier program. I didn't hear you mention it and I didn't notice it in your testimony, though I may have missed it. If I did, I apologize. I'd ask for a quick assessment of that.

Also, the SS-N-27, which I guess the Soviet NATO or Russian NATO name would be Sizzler, or even the Chinese inventory, we're calling it the Klub--is that correct? Have we done any net assessments on that versus carrier vulnerabilities? And if you could address that in an open forum, I would appreciate your views of that. There has been some, recently in the press, addressing some concerns about American aircraft vulnerability to the SS-N-27. Thank you.

DR. ERICKSON: Commissioner Brookes, thank you for those excellent questions. As for your second question, let me request that I be able to furnish an answer to you in writing. I want to make sure I get this straight and stay within the goalposts, if you will.

As to the aircraft carrier issue, I have coauthored a piece with a

colleague of mine on this. I think it's a really fascinating issue because it gets to the question of what, if any, are the scenarios beyond Taiwan? To what extent does China intend to project power into the Western Pacific and beyond?

In the course of doing this research, and I would be happy to furnish you with copies showing the detailed sources we've drawn this from, we've seen a definite interest in this subject. This appears to be under debate in China. What we're also careful to emphasize, however, is that should China pursue such a course, it would have a long way to go in making this a truly effective platform.

In our view, an aircraft carrier is truly a complex system of systems to project air power on the sea. That takes a lot of air expertise. It takes time to practice and master. So we would not be surprised if China were indeed making some significant steps in these directions, but we're just very careful to emphasize that it will take a lot of broad-based effort and would be a major investment for China to actually have an operationally useful aircraft carrier.

I would not be surprised if, in the years ahead, China does indeed move in this direction, but, were a Chinese aircraft carrier to appear in some form in the near future, I don't think that automatically means a strong operational capability. I think it's something we have to look at very closely.

COMMISSIONER BROOKES: I think people were interested in the fact that it may show a change in Chinese strategy in terms that are

military modernization as opposed to one of asymmetry, you know, submarines, anti-ship cruise missiles, towards this, but I also think there's other opportunities besides power projection. There's presence. There is the energy security dilemma that they have, the Malacca dilemma as some of them call it, that a carrier could provide that sort of presence, maybe not our sort of air operations, but maybe VSTOL or something along that line, and I guess there was some commentary via the Hong Kong press recently about a Chinese admiral saying something at the National People's Congress, and I was just trying to, since one of our witnesses this morning said it, I was interested.

I realize it's probably something down the road, I don't want to emphasize it too much, but it does show a trend since we have to think beyond, you know, the next few years in terms of the Chinese military modernization. So if any of you gentlemen have any comment on that, I'd appreciate it.

MR. COOPER: Just one comment and I think it just echoes what Dr. Erickson said in terms of the difference between putting out potentially one or two carriers over the next, let's say, ten years, maybe one carrier sometime around or after 2015, and transitioning to a carrier navy, entirely different things. I don't think we have much, you know, basis for seeing a transition plan to a carrier navy in the PLA Navy right now, nor does it seem to fit with, really with what they perceive to be their most immediate threats.

But I think that to dismiss the program out of hand based on that,

I think the idea that having a hybrid navy that sort of gets them in the same neighborhood as Thailand, the Indians, in terms of being able to put out a carrier for some use, and again operationally probably not that great for the things that are immediately on their plate, but it is quite possible, and then again you have to think of potentially other missions that could be used for a platform like that that might involve heli-borne assets and things like that.

COMMISSIONER FIEDLER: Commissioner, could I follow up?

HEARING COCHAIR WORTZEL: General, you're probably the only guy on that panel that's flown off a carrier.

GENERAL CARTWRIGHT: I think he's got it right, but I would watch, if at say 15 years out, it's not one or two, they go into a big-- that would be a trip wire.

COMMISSIONER BROOKES: So it depends how you define aircraft carrier. If you talk about helicopters, amphibious assault, as opposed to what we think of as an aircraft carrier, 100,000 tons of sovereign territory, U.S. territory, so I guess it also depends how we define it.

Do you have a view as to whether this is a VSTOL or a heli program?

CHAIRMAN BARTHOLOMEW: Quick answer. Quick.

HEARING COCHAIR WORTZEL: Yes or no?

DR. ERICKSON: It's hard to find definitive evidence. I would emphasize what you've said about a broad definition of a carrier and a

broad definition of operational utility to include presence. I think they would value that.

HEARING COCHAIR WORTZEL: Thanks very much.
Commissioner Fiedler.

COMMISSIONER FIEDLER: General Cartwright, I'd like to make a comment or an observation and then ask a question, and if my observation is faulty in any way, I'd like you to correct me on it.

When we talk about conventional weapons and/or power projection, we talk about physical distances, and we've heard testimony about 200 miles, 400 miles, but when we enter the realm of cyber warfare, power projection has a different meaning. Distances are relatively meaningless because anybody can get right to us relatively quickly.

So my question is this, two parts: is our greatest vulnerability are information systems, one; and two, is China our most capable opponent? Or who, if China is not, who is our most capable opponent?

GENERAL CARTWRIGHT: The first premise, which is the geographic premise, I think is accurate. It is challenging us on one hand--the fact that you move so quickly and that borders because of these networks, geographic borders, are somewhat irrelevant. But having said that, one has to be careful because if you follow that down, then our laws start to become questionable, which are generally based in property and geography.

And so it is a challenge, and the question is can you build

analogies so your law remains firm and you can start to build analogy from that.

The issue then becomes, is China the most sophisticated adversary in this environment or capable? Let's put it as capable. If not China, who? It's not that clear that that is the case. I would tell you that the capabilities that are most intriguing are their dedication to, one, bringing this into their military structure; two, building schools all the way through doctrine, et cetera, and plans to be able to use this type of capability in a military context.

Other nations are doing likewise, but I do not believe any have demonstrated the scale or the financial commitment to move in the direction that China has demonstrated, and when I go back to my original statement about what tends to differentiate is how much resource a nation is willing to put at it, that's where I would say China starts to break out of the crowd.

COMMISSIONER FIEDLER: And the time horizon of the development of most weapon systems is in years, conventional weapon systems, whereas the time horizons in developing the offensive capability in cyber warfare is compressed.

GENERAL CARTWRIGHT: Closer to Moore's law.

COMMISSIONER FIEDLER: Yeah. And so you didn't quite answer my question about vulnerability. You used the term "challenge," "a great challenge to us." But of all of our vulnerabilities as a nation to our adversaries, is cyber warfare one of our greatest or

our greatest or second or third or what?

GENERAL CARTWRIGHT: There's a good debate starting to emerge, and I don't know yet that we understand. But is a cyber attack a weapon of mass destruction, you know? Is the regret factor associated with it, should it be treated in that context? I think people are starting to get their head around this. Industry has certainly already gotten their head around this issue.

I don't think the nation has gotten their head around that issue yet, but I think that we should start to consider that regret factors associated with a cyber attack could, in fact, be in the magnitude of a weapon of mass destruction.

COMMISSIONER FIEDLER: Thank you.

GENERAL CARTWRIGHT: That will cause some noise, but--
[Laughter.]

HEARING COCHAIR WORTZEL: Gentlemen, we're scheduled to end at 2:30. I think if you can go five more minutes, I think we can get at least one more commissioner to ask a question.

GENERAL CARTWRIGHT: Yes, sir.

HEARING COCHAIR WORTZEL: So I guess next to Commissioner Shea.

COMMISSIONER SHEA: Well, I have a bunch of questions, but I'll try to get a couple of them in here. Thank you, gentlemen, for coming today. You talked a lot about the modernization of the PRC military and the professionalization. I was wondering if you could

give me a sense of the Party control over the military? And my understanding is that the PRC military has become more professionalized over the years, with much greater focus on professionalization, and there's been less emphasis on Party control. And I just was wondering if you had a sense of that, how big an influence the Communist Party plays in PLA and PLAN thinking today?

MR. COOPER: I don't think you can approach that as a zero sum game, that the fact that they are becoming more professional, to then make that leap that they will begin to look more like a state army as opposed to a party army. I don't think we can say that. That debate has been going on for a number of years. Folks a lot smarter than myself have weighed in over the past decade in terms of what the likely trends are.

But what I see, and particularly what I see from the last couple of sessions of their Party and People's Congress, is that the party is certainly worried about that because you now see in stated mission objectives, at the very top, from Hu Jintao down through the military leaders at each of these sessions in enumerations of PLA missions and objectives, it's right there at the top.

It says that you are here to ensure that national development continues, and that is specifically linked to continuance of the Party's control over the country as a whole as primary protector of their sovereignty. So there's obviously concern on the part of the Party that

professionalism might take the army away from the traditional modes of Party control.

But I have not seen that happen, and I think that the concern on the part of the Party to ensure that political education continues, and that the power and the interface of the political cadre throughout every level of the army continues as evidence of that continued sort of control. So again don't equate the professionalism and professionalization, which is certainly ongoing, and some will say that as the nascent NCO corps goes, we'll really be able to tell just where that's headed, but don't equate that necessarily with sort of a loosening of Party control over the apparatus within the PLA because I have not seen that to be the case. And in fact, in some areas they have worked to strengthen that all the more.

COMMISSIONER SHEA: In the same vein, do you, I know there's been a lot of speculation, I think in your written testimony, which I just saw, Mr. Cooper, you address this issue. But curious to know whether you think or the gentlemen on the panel have any thoughts on whether the political leadership of the PRC was in the know with respect to the recent ASAT?

GENERAL CARTWRIGHT: That would have been my comment because I agree exactly with what he said, but then you see this activity associated with the ASAT--

COMMISSIONER SHEA: Right.

GENERAL CARTWRIGHT: --where there seems to be a large

disconnect, or at least it's perceived because of who indicated they knew and didn't know, that somehow the military got disconnected from senior leadership, and what worries me in that case is you have a military organization, if they somehow become disconnected from the political leadership, there are any number of scenarios that would be very worrisome in that kind of a situation.

COMMISSIONER SHEA: Right.

GENERAL CARTWRIGHT: So I say that, but we have not, that's not been unlike we have seen in the former Soviet Union, the United States. Things do happen that don't necessarily get connected.

COMMISSIONER SHEA: Right.

GENERAL CARTWRIGHT: So you have to be careful to be too literal with this, but that was the one instance I think that gave us all pause was their reaction to the ASAT test when we said, gee, what are you doing and, oh, nothing.

COMMISSIONER SHEA: Right. Silence.

GENERAL CARTWRIGHT: Yes.

MR. COOPER: Let me address that a little bit, and I'll caveat first by saying I have not done a lot of research in the aftermath of the test on this. I think that we have not seen some of the things in the aftermath of this test happen internally in China which would indicate that they really, that they were unaware of what was going on to the extent that heads are going to roll within the PLA; there's going to be significant changes to the way we do business based on this.

There have been in the aftermath of things like SARS outbreak, you know, the submarine incident, the submarine sinking. Some of those things we saw evidence afterwards of how the political leadership responded to and dealt with what they saw as being the military being out of the box. And again some of that could be going on, and I just don't see it, but I haven't seen a lot of that.

And again, in the case of an actual planned test at that level of the sort of implications that we're talking about with space debris and the other things that, again, the level of foreknowledge was not there or that there was that major disconnect. There may have been disconnects at a variety of levels, but again I would find that hard to believe that that would be an indication somehow of the military being out from under the Party's control.

GENERAL CARTWRIGHT: I think it does demonstrate--let's just follow that line--that there is a level of compartmentalization in the government then, and that too is insightful.

COMMISSIONER SHEA: Thank you. Thank you.

HEARING COCHAIR WORTZEL: Gentlemen, I want to thank all of you very much for your time.

Our next panel is kind of a branch and sequel of this one, and I still have two commissioners that haven't had a chance, and they'll go to the top of the list for the next panel.

Thank you for your time. Thank you for your attempts to educate us and for your service here. We're going to take about a five

minute break and set up the next panel.

[Whereupon, a short recess was taken.]