CARNEGIE-TSINGHUA
CENTER FOR GLOBAL POLICY

Transcript

CHINA IN THE WORLD PODCAST

Host: **Paul Haenle**
Guest: **James M. Acton**

Episode 36: Conventional Prompt Global Strike
January 5, 2015

Haenle: You are listening to the Carnegie–Tsinghua China in the world podcast, a series of conversations of Chinese and international experts on China's foreign policy, international role, and China's relations with the world, brought to you from the Carnegie–Tsinghua Center in Beijing. I am Paul Haenle, the director of Carnegie–Tsinghua Center and I'll be your host.

Today, I am delighted to be joined by James Acton, visiting from the Washington D.C. office opf Carnegie Endowment for International peace. James Acton is co-director of the Nuclear Policy program and a senior associate at the Carnegie Endowment. A physicist by training, James specializes in deterrence, disarmament, nonproliferation, and nuclear energy. His current research focuses on the nuclear fuel cycle in Japan, hypersonic conventional weapons, and [he] is regarded as among the most influential and authoritative [people] on the subject. James, thank you for being here today, thank you for doing the podcast, and thank you for doing an event here at CTC today.

Acton: Thank you for having me, it is always good to be back in Beijing.

Haenle: So, for over a decade the United States has sought to develop this long-range hypersonic conventional weapon for the conventional global, conventional prompt global strike (CPGS) program. The successful testing of an advanced hypersonic weapon in November 2011 marked an important breakthrough in U.S. efforts, but a second test in August of this year was unsuccessful. Developing these weapons could have important implications, both positive and negative, for this region and the Asia Pacific. So I am glad that you are here with us to examine the status of the U.S. conventional prompt global strike program and access its implications for regional and global security as well as the potential for the United States and China to explore confidence building measures that could potentially reduce the risks of hypersonic weapons and instead enhance strategic stability. Let me just start by asking you very basically what is hypersonic weapons system? Can you describe conventional prompt global strike program? How do these systems work?

Acton: A hypersonic weapon is any weapon that goes faster than 5 times the speed of sound, that is MAC 5. And there has been an effort in a number of countries over the last decade or so to develop very long range, prompt weapon systems, that can deliver nonnuclear weapons. There is a number of technological approaches to doing that. One of the approaches, the one that is being focused on in the conventional prompt global strike program, is the so-called "Blue sky technology," and these are launched by large rockets. But rather than going into space and arching high above the atmosphere, they reenter the atmosphere quickly at very high speeds and release a glider. And that glider can stay aloft potentially for thousands of kilometers and it is unpowered, it is just continuing under its own inertia. And those glide weapons are the current focus of the conventional prompt global strike program.

Haenle: And why, at this moment, is there new interest in the United States in the system?

Acton: Well, as you noted in the introduction, this has been going on for a decade at the moment. And I should emphasize first that this is a research and development program. These weapons have not yet been deployed. In fact, the United States has not yet taken a decision about whether or not it wants to acquire them. Instead the focus is on research and development. I would say this is a program driven by technology. The developer's philosophy is to develop it first and then to work out what to do with it.

Haenle: You mentioned today that, during the Bush administration, there was a concept on capabilities-based planning. But this was a system based on that rather than basing it on threats. Can you explain that a little bit?

Acton: So during the Cold War, the U.S. defense policies adopted an approach called threat-based planning. The goal was to identify what threats there were and to develop weapons to count on particular threats. What the Bush administration argued was that, actually, it is very hard to predict what the threats were; threats were unpredictable. So rather than developing weapons to respond to a particular threat, one should develop weapons that might be useful in a whole range of different scenarios and brought particular capabilities to bear. And that one should focus on developing capabilities rather that responding to threats. The conventional prompt global strike was an example of this capabilities-based planning. The Bush administration didn't articulate particular missions for it. Instead this could be used in a wide range of different circumstances.

Haenle: And this administration has also said that the system is not about specific scenarios. However, they have developed or talked about possible missions that this can be used in.

Acton: Right, I think the Obama administration is more sympathetic to threat-based planning. And they are kind of moving back in that direction. First, the United States hasn't decided what CPGS is for. However, senior officials and some official documents have said that we are thinking about the possibility of using them or acquiring them for a number of different purposes. These are possible missions this are not a the concept of operations, this is not a doctrine, these are possible uses for which CPGS weapons might be acquired. And they include attacking the nuclear forces of North Korea or perhaps in the future Iran. Secondly, attacking advanced anti-satellite capabilities, and that mission is largely about China. Thirdly is suppressing advanced defensive systems, which is mostly but not entirely about China. Fourthly is the counterterrorism mission. And each one of those is a possible mission; this is not realistic missions that have already been decided for CPGS.

Haenle: During your time here and during your research, what do you understand the Chinese concerns about this system to be?

Acton: Well, you'll notice that the first mission I identify was attacking the nuclear forces of Iran or North Korea. There is deep fear in China and for that matter in Russia as well. But actually CPGS is about holding Chinese or Russian nuclear forces at risk. There's not much evidence in my opinion that the United States seeks to use CPGS weapons in that way. However, I think Chinese fears that that is what United States wants to do are genuine and there is a real fear about that.

Haenle: And you wrote an op-ed in the *NY Times* that mentioned that the most recent Defense White Paper put out by China for the first time did not mention no first use. Do you see any correlation with development of this with the research by the United States into this kind of systems and changing, slight shifts in the doctrine by the Chinese?

Acton: Well, let me tell you about one of the responses to my op-ed from General Yao Yunzhu from the Academy of Military sciences. I haven't got it in front of me, so I apologize if I misquote her slightly, but what she said was that China has consistently upheld its no first use doctrine and it is not going to change it. But then she said, 'we do have concerns, and we are concerned about in particular the combination of conventional advanced weapons with ballistic missile defense. We do have the fear these two could be used together so that the United States could disarm Chinese nuclear forces and the United States wouldn't need to use nukes in the process.' So, I think there is a relationship between the development of these U.S. capabilities and concerns within China that lead to some debate within China about no first use.

Haenle: Let's talk about the view of congress in the United States because I understand that there are some developments in Congress that may put fuel on the fire at this question or exacerbate the concerns. Can you talk about Congress' mandated study?

Acton: So in the 2014 National Defense Authorization Act, Congress required the Department of Defense to do a study on the ability of U.S. conventional and nuclear weapons to attack underground Chinese targets. Many Chinese scholars have argued that this is evidence that the United States does seek to use conventional weapons to attack China's nuclear forces because some of those tunnels are for reportedly hiding China's nuclear forces. This is one of those times when I think there is a lack of neither side, neither the United States nor China, has a good understanding what one another's political systems and the internal dynamics. Congress doesn't set U.S. military posture. And the president can't stop Congress from ordering a study on something but that doesn't mean that it's actual U.S. national policy to use conventional weapons to undermine China's nuclear forces. So that is one example of the way in which Congress can sometimes stir things up between the United States and China.

Haenle: Do you think it is the U.S. intention within the Defense Department [or the] defense establishment to consider using conventional prompt global strike to attack Chinese nuclear weapons as part of its strategy?

Acton: I don't think it is. As I have said before, the Obama administration in its nuclear posture review said specifically that CPGS is not intended to undermine the strategic balance with either Russia or China. I don't believe it is a US policy to use CPGS to target China's nuclear forces. That said, I do accept that the Chinese concerns on this score are genuine. There is genuine concern about this in China.

Haenle: One of the things I know you have said in relation to whether or not it is U.S. intention to use this system to attack nuclear weapons is that it would be very hard to do that. Can you expound on that a bit? Why would it be hard to use this conventional prompt global strike to attack nuclear weapons?

Acton: China has been spending a lot of money over the past 2-3 decades on increasing the mobility of its nuclear forces. The single most important part of that process has been moving it rather than having a intercontinental ballistic missiles in silos. I believe that Chinese experts sometimes refer to them as missile tombs because it is where missiles go to die. China has been, instead, focusing on road mobile ballistic missiles. The challenge is working out where they are.

Tracking mobile missiles in a country as large as China with as good as air defenses as China, is a tremendous challenge. Let me give you an example of the scale of the challenge. In the first Gulf War in 1991, the United States tried to hunt down Iraq's force of mobile scuds. And the United States flew 1460 sorties against mobile scud-related targets. And it had a grand total of zero confirmed kills. That is an example of the extreme difficulty of hunting down mobile missiles.

Haenle: Now, the Israelis in their efforts to destroy Hezbollah missiles have had a higher rate of success. So does that undercut your argument?

Acton: I don't think it does when you look specifically at the way that Israel did it. There are lots of differences. To highlight the most important one: what Israel did when it was hunting down Hezbollah's mobile missiles, or more correct to call them mobile rockets, was it waited until the rocket had been fired, detected the plum from the rocket so it knew where it had been fired from, and then destroyed the launcher with the goal of preventing the launcher from being reused. If the United States were hypothetically to go hunt down Chinese mobile missiles, there wouldn't be much point in destroying the launcher after the nuclear missile has been fired. The U.S. goal would not be to prevent China from reusing the launcher; it would be from preventing the nuclear weapon from being fired in the first place. There is a whole series of reasons like that to say even though Israel was very effective against Hezbollah in 2006, it is very unlikely that the United States will be nearly so effective against China.

Haenle: I understand. James in your very good report, "Silver Bullet," which [was] published on this, you talked about the risk of escalation of this kind of system. One, of course, would be, if the United States were using it, to strike North Korean nuclear weapons, of course, and China was able to observe it in the way they would not know whether or not it was coming directed at China or directed at North Korea. Can you talk about some of these escalation risks that you highlight in your report?

Acton: So, in the report, which if you will forgive a plug is freely available on the Carnegie website, I don't come out as for or against this system, but I am trying to explore the advantages and disadvantages and benefits and risks. And some of the risks relate to escalation. Let me give you another example of a potential escalatory risk. One potential target for CPGS weapons conceivably might be Chinese Command and Control for its missile forces. Some of that is reportedly buried, and, because they go very fast, conventional prompt global strike weapons could be more effective at attacking buried targets. It has been reported, corrected or otherwise I don't know, that China has the same Command and Control System for its nuclear forces as for its conventional forces. So if the United States were to attack this Command and Control system for the purpose of suppressing China's conventional ballistic missiles, would China interpret that as an attack designed to deny Beijing control of its nuclear forces? And if China did interpret it in that way, might it have cause to escalate to the nuclear level? Those are the kind of escalatory risks that I don't think we are discussing or talking about enough.

Haenle: And this you define as target ambiguity?

Acton: Correct, because it is ambiguity about the nature of the target. Is the United States trying to target a nuclear target or a conventional target?

Haenle: And what I described as not knowing where the missiles are going you defined as destination ambiguity?

Acton: Right.

Haenle: And there is another category warhead ambiguity. Can you describe what that is?

Acton: In this case it is possibly helpful to look at this historically. The first plan for CPGS weapons was in fact not these boost glider weapons. It was to take the warheads off some of the sea launched ballistic missiles, the trident missiles that the U.S. currently uses to deliver nukes, and replace some of those nuclear warheads with conventional warheads. And that was known as conventional trident modification. And Congress was very worried that if particularly Russia detected the launch of a conventional trident, it would mistake it for nuclear trident and launch a nuclear response. So that was ambiguity about the nature of the warhead, that was warhead ambiguity. That is another escalatory risk.

Haenle: And the last category you define as "crisis instability."

Acton: So this is the case that one of the long held risks of nukes is the risk that if I think my nuclear forces are at risk, whether I am right or not, in a deep crisis I might face use or lose dynamics. I might decide to use nuclear weapons because I am worried that if I don't I will lose them. Even though I think that the purpose of CPGS is not to hold China's nuclear forces at risk, if China believes that is the purpose of CPGS, in a deep crisis it could have an incentive to use a nuclear weapon first. And that's crisis instability.

Haenle: Understood. So could you describe for us then some characteristics that we could look at with the regard to this system that could make it less risky in terms of developing? What should we aim for in lowering the risk?

Acton: It is a great question. The reality is that there are tradeoffs here. Let me give you two examples. Something that flies in a non-ballistic trajectory, something that is not a ballistic missile like a boost glider weapon, is an advantage because it would probably reduces warhead ambiguity. Because up to date all American long range ballistic missiles have been nuclear, so if we use a boost glider weapon with a non-ballistic trajectory that would reduces warhead ambiguity. However, as you mentioned earlier, gliders are also able to maneuver. So whereas ballistic missiles are entirely predictable, once a ballistic missile's engine has burned out you can predict exactly where the is going to land, it has no capability to maneuver. So in that case a ballistic missile increases warhead ambiguity but avoids destination ambiguity, whereas a boost glide weapon has destination ambiguity but less warhead ambiguity. And at the moment, in the United States we're entirely focused on warhead ambiguity. That has been the a big factor in the development of the program, and in some sense it's the United States trying to work out what the other countries are worried about but it is not really talking to other countries. I think it would be very helpful to have a more serious international conversation about, given there is no perfect system for reducing risks, given that any system has some positive attributes and some negative

attributes, what do we want to optimize, and what do we willing to optimize stuff at the expense of?

Haenle: So in that regard, let's come back to China then. As I understand it, China has acknowledged that it is working on a conventional ballistic missile system and has fielded such systems, are there then cooperative measures that we can take with China potentially to reduce the risks?

Acton: I think there are. As you noticed China's most famously DF21D ballistic missile, which is a conventional ballistic missile with an anti-ship function. There media reports of other conventional ballistic missile systems under development. There is lot that could be done to reduce risks. Let me give you two concrete examples. One would be data exchanges between the two countries. I think if China had more confidence about how many, if the US decides to buy CPGS, how many systems it might buy, when it might buy them. If China had more confidence in that, then it would be less worried about the survivability if its nuclear forces. So, those kinds of data exchanges done on a reciprocal basis might be helpful. Another example is, as some Chinese experts say, we are worried that United States might put nuclear weapons on boost glider. If that is a real concern, then one could imagine confidence building measures, such as inspections of systems to prove that the warheads were nonnuclear. I think cooperative measures are a lot more effective than unilateral risk reduction measures, and I think, in theory, there is a lot that could be done. Agreeing upon them and implementing them could be very difficult.

Haenle: James, thank you very much. This is an extremely interesting topic, it's an important topic, and you, as I said at the beginning, have done some of the most influential and authoritative work on this. We appreciate you joining our podcast today and also coming to Carnegie–Tsinghua Center, and you are welcome back any time. That's it for this edition of the Carnegie–Tsinghua China in the World podcast. If you'd like to read or learn more about James Acton's research about the conventional prompt global strike system, you can find more articles, events and podcasts on the Carnegie Endowment's website at www.carnegieendowment.org. Thanks for listening and be sure to tune in next time.