



**Transcript: FAS Podcast “A Conversation With An Expert,” Featuring Hans Kristensen, Director, Nuclear Information Project**

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**Annie:** Welcome everyone to the FAS podcast series, “A Conversation with an Expert”. I am your host Annie Wu, Development Intern here at FAS. My guest today is Hans Kristensen, Director of the Nuclear Information Project, where he provides the public with analysis and background information about the status of nuclear forces and the role of nuclear weapons in our world.

In today’s podcast, we will discuss the status of China’s growing nuclear arsenal.

Welcome Hans.

**Hans:** Thank you.

**Annie:** Let’s begin. Hans, what is the current attitude of the United States government toward China regarding their arsenal?

**Hans:** Well, the estimate that we currently see or the information coming out is that they see China (of course like anybody else) modernizing its military forces in general, and that it is producing several new nuclear weapon systems, being deployed as we speak and in the coming years. You could talk about the attitude of the United States government -right now it’s something they are following with a great interest and they are concerned about the long-term prospects about this. U.S. military planners are taking it into account the way they plan their own force structures and strategies and all these things. So it is something that we will be keeping a close eye on, and something that is also not just for U.S.- Chinese relations, but also of course for the whole- the role of China in the northeast Asia, it’s a huge importance for other countries in that region as well.

**Annie:** In the new [Nuclear Notebook](#) (published in the November 2011 issue of the *Bulletin of the Atomic Scientists*), you write (along with Dr. Robert Stan Norris), about the status of China’s nuclear forces, which is increasing. Can you give our listeners a brief summary of how China is going about increasing their nuclear arsenal, and future implications of this?

**Hans:** Certainly. Well first of all, it’s a little hard to get information about the Chinese nuclear forces because China doesn’t publish information itself, very basic information. There is some information coming out from television stations and publications made by the foreign minister or even the PLA, the Chinese military establishment itself.

The other issue is that right now China, as you said, is increasing its arsenal. But it's not a massive increase like, you know, a cold war build up by any means, but there are two things are going on. One is the generational shift. They are phasing out the old generations of missiles that are liquid fueled, fueled by very volatile materials that are pumped into the missile. They are replacing them with so called solid fueled missiles that are much easier to handle, and they are also quicker and they launch much faster- you can get them underway within 10 to 15 minutes depending on the set up, whereas with liquid fueled you have to spend many hours to fuel the missiles before you can launch them.

Then, the other thing that's going on is that China is putting a greater portion of its long ranged missiles on wheels, on very mobile systems that can roll them around in the countryside (on roads of course), and use designated launch sites for firing the missiles. But it's a very different way of operating a nuclear force compared with what has been the case in the past, simply because it enables you to disperse your force and move it around in a way you just couldn't before. And the reason China is doing that is because it feels very vulnerable; it feels its force is threatened. China has a minimum nuclear deterrence as it's called, which means that it has not build up its nuclear forces to include great numbers of nuclear weapons compared to United States and Russia. But, it still believes strongly that it is an important mission that it has, but it's worried that U.S. and Russian military forces in general have become so efficient that they could threaten the survival of, and the ability basically of China to be able to respond, to retaliate, with nuclear weapons. And so in an effort to offset that concern, they are putting a greater portion of their long way missiles on wheels so to speak. So that is a significant new development, but it is not an entirely new development. China has had mobile missiles ever since the 1970s, and it has had long range systems that could reach the United States for that matter since the early 1980s. So, they were two issues that in and of themselves not new, but it's an emphasis now if you could say, that we haven't seen before.

**Annie:** Why is the Chinese government keeping information regarding their nuclear forces a secret? What would be the obstacles to get the Chinese government to become more transparent? And if this situation continues, how would it affect U.S.-China relations moving forward?

**Hans:** Well, there are probably several reasons for why the Chinese government is very secretive about its nuclear arsenal. First of all, all nuclear powers are very secretive about their nuclear arsenals. They are sort of the crowned jewels of any country, and they want to protect that information of course, but as the years go by and countries interact with others, they may accept that a certain amount of information is acceptable to leak. In the United States, you can get every detail and information about exactly what it has, where it is deployed and all these things. Because the United States considers that the strength of its arsenal is not necessarily the numbers or the secrecy about the numbers, but more about how it can use it if it came to a war situation.

China is a little different for its own reasons-the Chinese regime is very secretive in general. It doesn't want any information about what has been the pattern in the past; it didn't like information to come out about its military forces in general, some of that has to do with general secrecy in a regime. But another one has to do with the theory that if you want to safeguard your deterrent, you've got to keep the secret, you can't sort of reveal everything, because then your adversary could take an advantage of that, that's still the type of the theory.

So it's a way of protecting and a way of reducing the vulnerability in the Chinese minds of its nuclear forces. But of course, as the forces become more mobile and the missile force is more modernized, (presumably the command and the control system of it), it may be possible in the eyes of the Chinese military also to reveal more basic information about what it is and has in the future, because the

reliability of deterrent doesn't depend on whether you know it's there or how much you have, but how the country itself operates it if you will. So, we might see that China (in the future) will begin to say sort of things about how many and what type of missiles that it actually has and what its plans are for the future productions. But all of these things are very uncertain because we still have to see it happening, but I'm just saying that as it increases the survivability of its force and opens up perhaps more of a society that might be more willing to disclose more information; that has at least been the trend with other nuclear powers over the years, you just basically learn more and more about it. So we'll see what will that happens with China.

It could be an important, very important thing to do for the Chinese government because it would greatly help offset some of the sort of war mongering that the "Chinese are coming" and this type of characters that you see very much acting in the national security debate (both in the United States and in Europe and elsewhere for that matter). And that type of debate benefits from secrecy; the more China keeps its force as a secret, the more you can speculate about it, the more rumors come up that may not be right at all but nonetheless get a great spin in public. So it's greatly in the Chinese government's interest, I think to disclose more about what it has, how many missiles, especially about its future plans-give us some general ideas about exactly how is it going to produce in the future- are we aiming for 500 hundred nuclear weapons, are we aiming for 1000 nuclear weapons? What is the plan? Its ballistic submarine program is coming online now- how many submarines are they going to produce? We know how many there are because our satellites and our spies can see it, so it doesn't help anybody to keep them secret. Just give us the number, tell us what it is, and tell us what the plan is. Those could help greatly reduce some of the worst case scenario planning and suspicion that exists in the public debate about Chinese nuclear forces and military intensions in general.

**Annie:** An [article](#) published in the *Washington Post* on November 29 describes research regarding China's nuclear arsenal which is being conducted by Georgetown University students via online data, satellite imagery and translation of Chinese documents. In the article, you are quoted as saying, "The research has value, but it also shows the danger of the Internet". What are the implications from research such as this and what are the dangers of using the Internet for this type of research?

**Hans:** One of the problems and one of the issues with the Internet is that anybody can publish something. And if you just go out and look and pick it up from the Internet, well it doesn't mean that it's accurate. There is a tendency to say that because the information has been found on the blog or a website of a magazine or an institute or whatever, therefore it is accurate. But of course it isn't necessarily the case, and it has to be accompanied by sort of scrutiny and clear thinking and an assessment about, so we have this information but does it stand up to scrutiny. And here the particular study we are talking about has a number of issues. I'll mention two here.

The most fundamental one is an assertion that China might have up to something in the order of 3,000 nuclear weapons. That would be a huge arsenal- greater than that of France, Britain, Pakistan, India and Israel combined. But it doesn't. One of the issues here is that they have gone out, picking a few blog entries from some websites somewhere that made this claim, combine it with some very early on projections back in the 1970s about how Chinese nuclear forces might evolved in the future- projections that have turned out not to be true-they didn't unfold like that. And then they have combined these and projected that," oh therefore there might be something in the order of 3000 weapons" but it is not the way you do projections and estimates about nuclear forces. And the most fundamental problems about that is that China has not produced enough fissile material to build that many weapons, nearly. What China could produce if it used all of the plutonium it has created over the years is probably something in

the order of 400 to 500 weapons. But the estimate we have currently for Chinese nuclear forces is in the order of 240-250 weapons, something in that range. No higher. They simply don't produce enough, even tritium for example, which is needed in thermonuclear weapons. They don't produce more than sufficient to maintain something in the order of 300 weapons or so. I think of the projection of that is very, very inaccurate.

The problem we see now is I just spend a little time yesterday, searching the Internet for newspaper or article headlines that have come out as a result of this report and those headlines are: "China hiding 3000 nuclear weapons", "China might be much bigger than we thought"- these things just rolled around the world. And it becomes facts very much in people's minds, they can remember the headline but they can't what it was and certainly how the number was developed. This has greatly damaging potential. It is better to view the Chinese military forces realistically based on the information that actually exists out there that has been vetted, that is correlated with other critical chunks of information that we really need to be able to make such an estimate, such as fissile material production. And another issue is how many delivery systems China has for its nuclear weapons. It doesn't have a list of missiles for example- it has probably in the order of 140 ballistic missiles. It is building more for its submarines, it also has some aircraft that could deliver, so we think that it all together China has something in the order of about 170 to 180. So that is sort of where we can see with the limited information that exists in China.

Another problem with the study is that it uses satellite imagery a lot to illustrate where nuclear weapons and delivery systems are, and there are a couple of cases they are just playing it wrong. One of them is they claimed-again picked up from some blog, somewhere in the world- that there should be a deployment site for what is known as the DF-31, a new Chinese ICBM long ranged ballistic missile down in Kunming in Southern China. And so they show this image and you can of course in structures on the ground (and roads and what have you and fencing all these things), but there is no assessment about why they think the facility is for. And I looked at the image, I have gone over all these facilities and it is absolutely not a DF-31 deployment site. It looks like an ammunition depo for the Chinese army. But you know they say," well, look at these buildings, they have these special tunnels in the shapes of the entrances that seem to go into the mountain", and then they found a photo that seems to have the similar slope going into a mountain in Tibet, they say:" Ah, so there must be DF-31 missile down in Tibet as well." It is a leap of faith in my view and just a very, very unhealthy way of doing extrapolations of data and conclusions about and making estimates.

Maybe, of course in the full report there is something that cautions people against going to many conclusions based on this but at least in the sort of briefing slides I have seen from this report, it doesn't seem to be the case.

So those are the two sort of major issues I have with the report. There are others, but on the one hand you could also look at the report as providing an enormous amount of information about Chinese obsession with burying things. China has been digging tunnels into the mountains for decades. It did that in the 50s and the 60s and the 70s and it continues to do so today. Anybody who has been spending more than a few hours on the Internet or especially on Google Earth looking at satellites images of China will see that air bases and other facilities are almost always accompanied by some tunnels that go into a mountain, at the facility itself or nearby. This is a standard way for China to do its business- not just for military uses, but also for civilian protection of the population. These projects go back to some very serious incidents- for example the conflict that China had with the Soviet Union. They got to the point where they thought there would be a nuclear attack and they made preparation for it. Tunnels can be used for many things- some can be used for nuclear missiles of course, you can store them inside, and

most of them are used for general military material and public safety or civil defense issues. Those are some of the issues you see, but of course China is obsessed with burying things and they do that all over the place, but that doesn't necessarily mean they are putting nuclear weapons in all those holes.

**Annie:** Thank you so much Hans for spending time with us today. This has been very informative. To those of you listening, if you would like to learn more about what Hans discussed today, please visit the FAS website at [www.fas.org](http://www.fas.org).

This concludes the FAS podcast. Thank you for listening in today. Please tune in next month for another edition of "A Conversation with an Expert".