

South China Morning Post, January 3, 2010

Is China's Rocket Science All It's Cracked Up To Be, Experts Ask

By Greg Torode, Chief Asia correspondent

Given its potential to wipe out an aircraft carrier – for America a core projection of its power – no weapon under development in China exercises strategic imaginations in Washington quite like the anti-ship ballistic missile.

The US intelligence community, which is scrutinising China's military build-up ever more closely, knows less about the missile than any other aspect of the PLA's armoury. It throws up more questions than answers.

Precisely how far has China's programme progressed? Would China ever really want to risk firing one, given the potential for disastrous miscalculation by its enemies?

Some recent media reports have suggested Beijing is close to completing the weapon. But a close reading of recent US intelligence and Congressional reports, official statements and academic studies shows considerable doubt remains about how soon a Chinese anti-ship ballistic missile will be ready, and whether it is feasible for China to build one.

A working anti-ship ballistic missile would put China in uncharted waters. While virtually all other weapons it is developing, from aircraft carriers to mobile launchers for nuclear weapons, represent technology used by other militaries, no other nation has developed a working anti-ship ballistic missile. The then-Soviet Union and the US were both eyeing such a weapon towards the end of the cold war, but both signed deals that stopped further work as part of arms control agreements.

China is not bound by any such agreement and apparently sees the weapon as a trump card in a so-called access-denial strategy that already encompasses ships, submarines and lower-flying cruise missiles.

If it succeeds, possession of such a missile could dramatically alter the stakes in the event of conflict between China and the US over Taiwan – a battle in which US aircraft carriers would normally be expected to play a pivotal role. It can be considered a powerful asymmetric weapon, providing a deterrent against the strengths of a larger opponent.

With a range of 1,500 kilometres from land-based launch sites, an anti-ship ballistic missile (ASBM) would put in reach China's most strategic and disputed waters in the western Pacific and Indian oceans.

"This concept has been percolating in China's strategic consciousness for some time," Dr Andrew Erickson, an associate professor at the China Maritime Studies Institute of the US Naval War College, said.

"My best guess is that China has the technological capacity to develop an

ASBM and has made great progress regarding hardware. Mastering detection, targeting and bureaucratic co-ordination will likely represent an ongoing challenge,” he said, speaking in a private capacity.

To understand those challenges, consider the basic concept of a ballistic missile. Traditionally aimed at fixed targets, such as a city, they are fired by rockets into space just above the earth’s atmosphere. Flying in an arc, they re-enter the atmosphere and plunge at high speed into their target, carrying conventional or nuclear warheads.

The anti-ship ballistic missile, however, has to somehow lock on to a specific moving target in the last part of its flight and then manoeuvre the warhead towards it. As it rushes to earth, the weapon must also be able to avoid fire from the ballistic missile defences of its target. It is, as one Beijing-based defence attaché describes it, “rocket science ... the ultimate in rocket science, in fact”.

China already has the basic hardware – the medium range DF-21D missile that is part of the People’s Liberation Army’s extensive inventory of ballistic missiles. Work on building over-the-horizon radars needed to find and track an aircraft carrier deep in the western Pacific, for example, is already under way.

It is much less clear how far Chinese technicians have come in creating a weapon that can be adequately manoeuvred in its final stages and do enough damage upon impact. Rather than trying to sink an aircraft carrier, it is likely China would seek, at the least, to destroy its all-important control tower and flight deck.

It must also make sure a system of anti-ship ballistic missiles has its own defences; an extensive array of land radars and satellites would be vulnerable to attack.

Despite these challenges, China has been intriguingly open on this particular score. While its programme has never been formally confirmed or included in its defence white papers, PLA writing on antiship ballistic missile theory and doctrine has surfaced, including a handbook prepared for the army’s Second Artillery Corps, the strategic rocket force responsible for China’s landbased missile arsenals.

Erickson notes that China’s welldocumented investment in anti-ship ballistic missile programmes “suggests Beijing’s leaders are optimistic about this technology”. He also notes that a flood of recent official reports and statements from the US defence and intelligence communities “makes that optimism appear justified”.

However, no one is offering a precise time line for the development of a fully functioning system, never mind a rocket test. This information vacuum serves the weapon’s most effective purpose – deterrence. Without being certain of whether China could successfully attack an aircraft carrier, the US increasingly faces the prospect of having to assume it can.

Already, the Pentagon's stated concern over access-denial weapons is affecting strategy and deployments, from the stationing of increased numbers of attack submarines in the western Pacific to the reduction in new destroyers that lack Aegis ballistic missile defences.

Erickson added: "When it comes to targeting a carrier, there will not be a sharp red line between no capability and full capability. Some Chinese analysts believe that even the significant likelihood of a capability may have a large deterrent effect."

Gary Li, a researcher at the London-based International Institute for Strategic Studies, said the raft of unanswered questions was probably serving Beijing's interests nicely.

"I think as an option the Chinese have been good at using a lack of transparency as a force multiplier," he said. "And whether or not the ASBM is a real threat, I think it seems to be working pretty well in terms of already scaring the US."

One Asian defence attaché noted that, despite a surge in commentaries and reporting from Washington, hard new facts about just how far Beijing had come were thin on the ground.

An untested deterrent about which facts are vague may be the safest outcome of an ASBM development programme. Firing one during a time of conflict would always run the risk of being misinterpreted in Washington or Moscow as a nuclear strike. And that could spark retaliation in kind. Would Beijing's leaders ever be so desperate that they would risk losing say, Shanghai, to a nuclear attack merely in order to destroy a US aircraft carrier?

Some Second Artillery Corps documents suggest firing warning shots at a carrier - an act which could also be misinterpreted by a foe, with dangerous consequences. "Authoritative PLA sources reveal overconfidence in China's ability to control escalation, which is itself an extraordinary danger," Erickson said.

"My own personal theory is that the Second Artillery Corps is overconfident because Chinese strategists have never had the sobering experience of, for example, a Cuban missile crisis, to impress [on them] the realities of the 'fog of war' and the potential for misperceptions and unintended, potentially disastrous consequences."