

CHINA'S AIRCRAFT CARRIER AMBITION

Much has been written over the past few years on China's potential aircraft carrier program. Recent assessments have ranged from 'China does not have an aircraft carrier program', to 'China is to build *Nimitz* like Supercarriers'! It is more likely that China is indeed about to build aircraft carriers, but cut from more conservative cloth than the *Nimitz* class, and that we will see the first indigenous Chinese carrier by 2013. What has happened during the past 20 or so years to get to this point?

First Steps

The purchase and study of the former Australian carrier HMAS *Melbourne* (1985), and former Soviet carriers *Minsk* (1998) and *Kiev* (2000), were no doubt significant to the overall aircraft carrier program and important tangible steps toward developing a carrier capability. The purchase of the *Varyag* Project 1143.5 aircraft carrier (1998), however, was a far more significant step and can be seen as a critical decision point for China to proceed with the development of an aircraft carrier capability sooner rather than later. This is supported by the manoeuvring and effort, if not the financial cost, China expended in getting the vessel. The *Varyag* represented a relatively modern design, with a sister ship in active service, and a vessel that could potentially be made usable. For a nation with no experience in operating aircraft carriers the outlay for purchasing this ship was negligible, and combined with the ability to take her time, the ideal way for China to develop an aircraft carrier capability. But why would China want such a capability?

Rationale for a Carrier program

Before we attempt to determine what type of carrier China's is trying to develop, and how many will be built, we must first understand China's rationale for developing this capability. China will view the value of an aircraft carrier from both a political and military viewpoint, both ways of increasing China's *Comprehensive National Power*.

As I have mentioned in a previous paper (*China's Path to Power*), aircraft carriers (amongst other weapon systems) provide a country with significant prestige value. Port visits, to both friends and potential enemies in order to 'show the flag', usually have a very important impact. Those who have seen a *Nimitz* carrier come into port and berth, and get close to view it can only be but impressed. The possession of such vessels also highlights the technological capability of a nation, and the nation's ability to undertake grand projects.

The military aspect of a Chinese carrier program is actually not as obvious as many might think. Some observers have lampooned any future Chinese carrier program, arguing that 1) China does not have the ability to build a *Nimitz*-style carrier, and 2) it will take China decades to become as proficient as the US Navy in aircraft carrier operations! These comments are of course correct but in my opinion they have led these observers to an incorrect conclusion.

Their assessments appear to be based on the assumption that China plans a direct naval encounter with the US, and that a central tactic in such an engagement will be carrier-on-carrier battles. This is highly unlikely to be a Chinese operational concept, nor are they likely to be drawn into such an engagement. We have all read extensively about China's asymmetric

approach to conflict with a military superior enemy. I do not believe China seeks military confrontation with the US. Should it come to that, and China wanted to target US carriers, it is far more likely to employ conventional submarines, long range cruise missiles, and tactical ballistic missile (if the complex targeting and course correction issues can be solved). While China does have this asymmetric approach with regard to a stronger enemy, this does not necessarily follow for an enemy that is military on a par with China! If this is true, what military application might China see for an aircraft carrier? Are there realistic scenarios where China would employ aircraft carriers to achieve a military objective?

One such scenario would be tension with India over energy supplies, one that required a Chinese naval presence in the Indian Ocean. India would have to be careful as to what assets it deployed against a Chinese naval force as some forces would have to be held in reserve against a possible intervention by Pakistan. China, too, would be limited as her substantial land-based air assets would most likely not be brought into play (unless sufficient warning time and political manoeuvring allowed basing in Pakistan or Myanmar). China's surface action combatants, such as the *Sovremenny* DDGs, as well as submarines, both SSNs and SSKs, should provide a sufficient threat to Indian ships, with an aircraft carrier required only to provide fighter cover, AEW and ASW capability.

Another scenario would be initial operations against Taiwan. This may seem contradictory as I have previously stated that China does not need aircraft carriers for operations against Taiwan. While I maintain this point, I also maintain that aside from maintenance of the State, reunification of Taiwan is the most important issue for China, and any weapon system that can help to achieve that will be encouraged. There is no doubt that an aircraft carrier would certainly help in at least providing fighter cover over parts of Taiwan for longer than land-based fighters operating out of China.

A third scenario would be conflict in the South China Sea over the Paracel or Spratly Islands. Given the distance from mainland Chinese bases, and the lack of airfields on the Islands (only one in the Paracel Islands on Woody Island), an ability to maintain fighter cover for extended periods would be crucial to the success of operations.

Fourthly, it is China's intention to be able to conduct operations out to the 'second island chain'¹, and the possession of aircraft carriers would provide the air support that would be required for such operations.

Finally, an aircraft carrier represents a "force-in-being", and therefore something that military planners must also take into consideration, even if those planners consider it unlikely to be employed against them.

For all these more plausible scenarios, the capability required for a Chinese aircraft carrier remains the same, that is; a focus on air superiority, ASW and AEW roles, and a limited requirement for surface attack (be it land or sea targets).

¹ The second island chain runs from Japan, the Bonins, the Marianas, the Carolines, through to Indonesia.

What type of Carrier?

So what type of aircraft carrier does China need to achieve both the political and military aims? It is possible that China is studying two potential designs; a 40,000-50,000 tonne carrier based on the Varyag layout (STOBAR concept) as a first step for training and trials, and a fully combat capable 93,000 tonne CTOBAR design (a la US carriers)².

I mentioned early about the impression a *Nimitz* carrier leaves on the public (and governments). These vessels are however very complex to both build and operate. It is unlikely that China is about to develop a similar sized or capable vessel, as they represent far more than what is needed for the assessed requirement! Nor would it be logical to assess that China, given its generally more patient and focused approach to capability development, would opt for such a difficult, risky and resource intensive approach. Even if the Russians did provide detailed plans for the *Ulyanovsk* Project 1147.3 aircraft carrier, China would still have to develop catapult technology and nuclear propulsion for a very large surface vessel.

It is more likely that the political and military purpose for a Chinese aircraft carrier can be achieved by building what would essentially be a copy of the *Varyag* (or *Shi Lang* as the ship has allegedly been named³). This course of action would also deliver a significant capability (albeit far below that of the US Navy, but on a par with other aircraft carrier capable nations), in the shortest period of time and with the lowest level of risk (both from a project delivery and operational point of view).

I say essentially a copy of the *Shi Lang* as I would foresee two minor but significant changes. Firstly, it is likely (given the assessed operational employment), that a future Chinese carrier would not have the long range anti-ship missiles as the *Varyag* was designed to accommodate (the SS-N-19 system). China would have to develop an entirely new weapon system if this was to remain part of the design. The extensive surface to air missile (SAM) armament⁴ however could well be retained given the carrier's role as primarily an air defence ship, and the limited number of SAMs able to be deployed to support the carrier. Secondly, and particularly due to the Chinese ability to plan well into the future, it may well be that China will be influenced by Britain's new CVF (*Queen Elizabeth* Class) and fit an indigenous carrier with a removable Ski Jump in order to future proof the design. This would allow China to operate the carrier now with ramp-capable aircraft, and provide time to develop a conventional take off fighter and catapult launch system, which would lengthen the operational life of the ship. Interestingly it has been mentioned that China may attempt to utilise magnetic levitation technology, as used on the MagLev train which operates from Shanghai's Pudong airport to the city, in order to develop a catapult launch system.

How Many?

The general rule of thumb is that a country would need three aircraft carriers in order to maintain at least one operational carrier at any time (it is interesting to note however that apart from the US no other country plans to have more than two carriers for the foreseeable future).

² According to the article, a Chinese Communist Party dossier noted the CMC's approval for the two projects, http://www.hani.co.kr/arti/english_edition/e_international/199284.html

³ Apparently Janes has reported the name, as have many websites. It is not clear if this has been confirmed.

⁴ The *Varyag*'s sister ship, *Kuznetsov*, is fitted with 24 launchers for 3K95 Kinzhal SAMs (total 192 missiles), a naval version of the 9K330 'Tor' system used by the PLA. The *Varyag* however was purchased with all weapon systems removed.

It is reasonable to assess that the most China can achieve with the *Shi Lang* is as a training carrier, with an emergency operational role. If so China may then build two new carriers, therefore allowing for one continually available. The assessment of two new carriers is also supported by two recent developments. The first of these is China's reported purchase of four carrier landing systems⁵. The report states that one will be used for a land-based training facility, one for the *Shi Lang*, and two for new build carriers. In addition recent construction of large naval vessels suggests a Chinese approach to building classes comprising two ships, and then producing improved versions incrementally⁶. The second development is the reported purchase of up to 50 Su-33s⁷.

When a country purchases aircraft, it normally ascertains how many operational squadrons it needs, a proportional number for training purposes, and an attrition reserve (size dependant upon a number of factors, including whether the country produces the aircraft itself or not). The Su-33 complement on the *Kuznetsov* is given as 12, out of a total compliment of approximately 50 aircraft⁸. 50 Su-33s would allow a force of 12 aircraft per carrier (bearing in mind that the *Shi Lang*'s compliment would also represent the training component), a small land-based training element, and an attrition reserve to suffice until an indigenous carrier aircraft could be developed (most likely a development of the J10 or J11). Russia for example has a force of 24 Su-33s to support its sole carrier, *Kuznetsov*⁹, but utilises the Su-25 as a carrier training aircraft. Unless China purchases similar Su-25s, or develops a carrier capable training (unlikely in the short term), China may have to purchase the two seat (side-by-side) version of the naval Flanker, the Su-33UB, as part of any potential Su-33 purchase.

When

It is reasonable to conclude that the *Shi Lang* is being prepared as a showpiece for the Beijing Olympics, and so will be ready by August 2008. When I say 'ready' here I do not mean fully capable, even in a training role, but rather to sail under its own power with aircraft onboard (if not actually able to launch fixed wing aircraft). Such a timeline would be consistent with the 'political' role, if not the military role, of the vessel. It is quite possible that any construction of an indigenous aircraft carrier, or even acknowledgement of such a program, would wait until after the Olympics have concluded, thus giving a completion (but not operational) timeline of around 2013 (if we accept that long lead items have already been ordered).

It is interesting to compare India's approach to developing an indigenous aircraft carrier. While already a carrier capable nation the Indian purchase of the *Admiral Gorshkov* (*INS Vikramaditya*), and Mig-29K aircraft, represents a far riskier and less capable entry into operating bigger aircraft carriers. It is also a far more expensive approach. The *Shi Lang* cost approximately USD\$30 million (purchase and towing fees) to get it to China¹⁰. Certainly there is much work to be done to make the ship operational, and we may never know the final cost. What we do know, and the real benefit to China, is that the development and

⁵ KANWA, 27 July 2007, cited by RIA Novosti, <http://en.rian.ru/world/20070727/69828953.html>

⁶ Large AORs such as the Qiandaohu class, as well as surface warships including the Type 051C and Type 052 A/B/C have all been produced in classes of two vessels, <http://www.sinodefence.com/navy>

⁷ The deal is apparently for an initial purchase of two aircraft, then an option for 12 and a further option for 36, 23 October 2006, www.kommersant.com

⁸ Naval-Technology.com and a number of other sites give it as 12, a surprising small number given the overall compliment of c.50, <http://www.naval-technology.com/projects/kuznetsov/specs.html>

⁹ <http://www.sukhoi.org/eng/planes/military/su33/history/>

¹⁰ A purchase price of USD\$20 Million, together with towing and insurance fees, VaryagWorld.com, <http://www.varyagworld.com/mystery.php>

modernisation skills that will flow from this will directly assist future Chinese carrier construction. Contrariwise, India is paying between USD\$900 to USD\$1350 million to have their former Soviet carrier modified in a Russian shipyard, and it is not likely to be operational until 2010¹¹.

Conclusion

The production of aircraft carriers based on a design that China has studied up close for many years, and one that a friend (Russia) operates, presents a low risk solution. So too does the purchase of aircraft (Su-33s) that have a proven operational record off the very carrier China now has, as well as an aircraft that is essentially the same as hundreds of other aircraft it already operates (the Su-27 family).

This line of thought argues against the likelihood of China building a *Nimitz*-style carrier in the near term. The Chinese, as pragmatic as they are, would have conducted something akin to a cost-benefit analysis, and asked themselves ‘What would we achieve for such a huge financial outlay’, especially given other priority projects¹². While the argument for building a bigger ship is strong – ‘steel is cheap and air is free’ – the argument for prioritising development of catapult technology, not to mention nuclear propulsion for a large surface vessel, is not. China may well have come to the conclusion previously stated: that a *Nimitz*-style carrier is far larger than what is operationally needed, it would be resource intensive, and most importantly it would be a risky proposition that could lead to failure, something that China could never accept. A *Varyag*-sized carrier, as described above, would provide a platform as capable as any non-US carrier, with the possible exception of the future French carrier.

Should the recent Russia statement of intent to build aircraft carriers be more than rhetoric, and intensive collaboration with China follow, it would be likely that future Chinese carriers would be larger and equipped with catapults. Time would seem to be against this for China’s first two indigenous aircraft carriers.

¹¹ This cost is likely to increase substantially. It should be noted that this figure does not include the purchase of the embarked airgroup, <http://www.defenseindustrydaily.com/ins-vikramaditya-may-hit-delay-cost-increases-03283>

¹² It would appear that a national integrated air defence system including surface-to-air missiles, radars, C3I and fighters, ICBMs, TBMs, SSBNs and conventional submarines have priority over an aircraft carrier project.