



A Drop in the Ocean: China's Aspirations to Acquire an Aircraft Carrier

*Richard A. Bitzinger & Paul T. Mitchell**

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PRIVATE BOAT owners joke that their vessels are a hole in the water, surrounded by wood, into which money is poured. In its quest to establish progressively larger areas of control over the oceans, China's musings over aircraft carrier programmes have set off alarm bells from Singapore to Washington. However, an aircraft carrier is a highly complex weapons system. The past is littered with less-than-effective but highly expensive carrier programmes, including, most spectacularly, Soviet attempts during the 1980s, but also more recently the Thai acquisition of the *Chakri Nareubet*. Ships can be built, but whether they can be used for operational effect is a different matter entirely.

The Vessel

China has two ways of acquiring a working aircraft carrier: it can buy one or it can build one. In fact, China has in recent years acquired three surplus carriers as scrap from Russia – the *Minsk* and the *Kiev* (two “pocket carriers,” capable of only flying Harrier-type “jump-jets” from their decks), and the *Varyag*, one of the former Soviet Union's attempts to construct a mega-carrier that could compete with the United States' Nimitz-class nuclear carriers. The *Minsk* and the *Kiev* were both turned into tourist attractions (the *Minsk* has subsequently gone bankrupt and is closed), but the fate of the *Varyag* continues to captivate China watchers.

The *Varyag* was a casualty of the post-Cold War: laid down in the early 1980s, construction was halted in 1992 with the ship only 70 percent complete. Ukraine, which inherited it after the breakup of the Soviet Union, stripped the ship bare and left it exposed to the elements for several years. When the *Varyag* was finally sold and delivered to China in 2001 – ostensibly to be turned into a Macau casino – it was a rusted shell, without engines, rudder, weapons systems, or electronics. In addition, the process of removing sensitive equipment from the vessel had resulted in damage to its core structure, so even its seaworthiness must be questioned.

The casino plans never came to fruition, but in mid-2005 the *Varyag* was moved to a drydock at the Dalian shipyards, where it was painted the grey of the Chinese Navy and its flightdeck repaired. Yet despite the flurry of speculation these activities caused, it is doubtful that the *Varyag* will become China's first working aircraft carrier anytime soon, given its needs for engines, operating systems, wiring, and so on. Restoring the *Varyag* to full effectiveness would take several years, and it would still be an unfamiliar and unreliable ship. At most, it may be used as a research and training platform for future carrier designs and crews.

So China is left with designing and constructing its own aircraft carrier. Rumours to this effect have persisted for the last 20 years, and the current conventional wisdom is that the Chinese plan to have a carrier in the water by 2010. If so, then the Chinese had better start

cutting metal now, because the average heavy carrier takes several years to build, not including the design and preplanning phases. Even after it is launched, it can take up to two years more to outfit a major warship and put it through acceptance trials before it is commissioned and accepted into service – even more so if it is the lead ship in that particular class.

The Aircraft

Commissioning an aircraft carrier carries additional burdens. More than any other surface combatant, a carrier is a “system-of-systems” in and of itself. To be tactically effective, carriers typically have several different aircraft types aboard in a “carrier air wing”. An American carrier air wing has four separate fighter squadrons, an electronic warfare squadron, a squadron of anti-submarine and search-and-rescue helicopters, an early warning squadron, and a cargo aircraft detachment. Moreover, each of these aircraft types must be designed specifically for carrier operations – land-based aircraft cannot simply be used at sea. Carrier aircraft require large fuel tanks for long-range operations, different landing gear for the stresses of landing aboard carriers, and special metal and paint combinations for their fuselage to resist the corrosive effects of salt and water at sea.

China may purchase the Su-33 fighter jet, which is flown off Russia’s single carrier, the *Admiral Kusnetsov*. It may also use its new indigenous J-10 fighter – in which case, it would have to be extensively modified in order to be used aboard a future carrier. But in order to duplicate the flexibility of American naval air power, the Chinese navy would have to begin a significant development programme in attack aircraft, airborne early warning, and in-flight refueling.

The Software

Carrier operations, by their very nature, are among the most dangerous conducted by militaries. The potential for mishap resulting in the death of the pilot or those supporting him is very high. The carrier deck is one of the most dangerous work areas given its relatively small size and the number of aircraft, operating jet engines and spinning propellers. During cyclic operations, the aircraft carrier is launching and recovering aircraft at the same time. The deck hands must guide aircraft to their launch positions, and others must guide those that have just landed to their storage positions. All the while, other deck hands are moving about the work space fueling aircraft, performing maintenance, and arming aircraft. Movement of these many pieces on the deck is a highly choreographed but deadly ballet: one misstep can result in a deck hand being struck by a moving aircraft, blown into the ocean by jet blast, or worse, sucked into the engine itself.

Landing aircraft on board the deck, moving in all three axes, is one of the most stressful aspects of flight. Indeed, studies have shown that naval aviators experience more stress during landing, especially at night, than during actual combat. The pilot is guided to his target by a series of indicator lights known as the “meatball” as well as receiving instructions from a “landing signal officer” who talks the pilot down. Finally, the pilot not so much lands as he “crashes” his aircraft onto the deck: his engines must be at full power so that if the arrestor hook misses the cable that stops the aircraft, the pilot can immediately take his aircraft back into the air.

Conclusion

There is little doubt that China is capable of building an aircraft carrier, just as Britain, France, Spain, and Italy have. The significant issue is not industrial capability but operational

effect. No other programme has come close to challenging American dominance at sea. An American carrier projects significant power due to its ability to sustain operations over several days, resulting in multiple and continuous strikes on targets. This ability comes not just from technological capability but also the training and practice of the ship's crew and pilots.

A single Chinese carrier operating a handful of fighters might be able to cow smaller navies. But any reasonably competent regional air force would likely outclass Chinese naval aviation its ability to sustain power, just as the Argentinean air force, limited only by the extreme range of its operations, nearly frustrated the British during the Falklands War. Like other carriers before it, a Chinese programme is more likely to resemble the proverbial money-draining hole in the water.

* *Richard A. Bitzinger is a Senior Fellow and Paul T. Mitchell is an Associate Professor with the Revolution in Military Affairs (RMA) Programme at the S. Rajaratnam School of International Studies, Nanyang Technological University.*