

Regional strategic trends – China's influence

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The dominant regional strategic consideration at this time is the unbridled growth of Chinese military power in the Asia-Pacific, which is coinciding with a period of serious economic and budgetary difficulties in the United States. The latter may well result in significant reduction in American capabilities to fight nation state conflicts, which in turn would see American deterrent capabilities in this region collapse in coming years. This has major strategic implications for Australia and has the potential to leave Australia more strategically exposed than at any time since the 1930s.

In March, the US DoD released its annual report to Congress on China's military power. This report was a strong departure from the Bush-era reports, which during the Rumsfeld period were heavily censored to remove any content that might distract Congress or the US mass media from the Bush Administration's focus on fighting wars in Iraq, Afghanistan and other parts of the Islamic world. The unprecedented China report elicited a barrage of public complaints from Beijing, with state sponsored media and government agencies producing editorials and critical statements. For all intents and purposes the reaction from Beijing validated the quality of the 2009 report. The summary section describing China's evolving military capabilities is one of the best summaries produced to date in any public analysis of China's growth, and worth analysing in some detail.

"The Department's understanding of China's military power has improved over the reporting period [since 2000] but much remains to be learned about China's national and military strategies, progress and trends in its military modernization, and the related implications for regional security and stability. China has improved modestly the transparency of its military and security affairs, but until it begins to view transparency less as a transaction to be negotiated and more as a responsibility that accompanies the accumulation of national power, the insights reflected in this

report will remain incomplete, bridged only by assessment and informed judgment."

The reality is that China has been playing a guessing game with its neighbours and the US for some time, concealing its strategic agendas – leaving analysts to infer its strategic intent by analysing what kind of capabilities it is developing, its military equipment and systems procurements, and its deployments. Most official output from Beijing, including White Papers, are mostly public relations, and often well crafted and thought out public relations.

"Defense Budget Outpacing Economic Growth. China's sustained economic growth, from a Gross Domestic Product (GDP) of \$1.95 trillion in 2000 to a projected \$4.19 trillion in 2008 (in 2008 USD) has enabled China to focus greater resources on building, equipping, and training the PLA without overwhelming the economy. One measure of increasing resourcing for the PLA is the official budget, which has more than doubled from \$27.9 billion in 2000 to \$60.1 billion in 2008 (in 2008 USD). The budget, however, does not capture the totality of military expenditure."

What is often not appreciated by Western analysts is that the structure of China's defence budget is quite different to Western budgets, and large proportions of operating and infrastructure costs are funded from local district budgets, akin to Australia's state governments each funding the

costs of housing, feeding and maintaining military assets in their jurisdictions. A Chinese defector remarked some years ago that this was a "clever ploy not understood by stupid Western analysts". In practical terms this makes accurate assessments of the PLA's budget very difficult.

"Strengthened Deterrent and Enhanced Strategic Strike. Since 2000, China has shifted from a largely vulnerable, strategic deterrent based on liquid-fueled, intercontinental-range ballistic missiles (ICBMs) fired from fixed locations to a more survivable and flexible strategic nuclear force. The introduction of two new classes of ICBMs, the DF-31 and DF-31A, both road-mobile, solid-propellant systems (the latter capable of targeting any location in the continental United States) reflects this shift. ... the fielding of these forces, along with a projected new class of nuclear-powered ballistic missile submarine (SSBN)/ submarine-launched ballistic missile (SLBM) in 2009-2010 enabling a credible sea-based deterrent, will give China's leaders greater flexibility and options for strategic strike than previously available. While U.S. strategic forces still far outnumber those of China, China would be able to inflict significant damage on most large American cities with these survivable systems."

This is an important development as it changes the strategic dynamic between the United States and China, the option of an American first strike



The DF-21 IRBM is derived from the JL-1 SLBM, and is the basis of the PLA ASAT and ASBM weapons.



The FT-2000 is a counter-ISR SAM, based on the HQ-9/FD-2000, itself derived from the Russian S-300PMU series.



The highly mobile JYL-1 search radar has been a very successful export product in the global market.



The H-6K is a new turboprop powered variant capable of hitting targets beyond 2,000 NMI range, with up to seven large cruise missiles.



The HT-233 is a derivative of the Russian 30N6 series and is a jam resistant agile beam engagement radar.

to decapitate China's nuclear arsenal becoming infeasible. China is rapidly approaching the capability to sustain a Mutually Assured Destruction posture relative to the Americans.

"Improving Anti-Access/Area-Denial Capabilities. Since 2000, China has expanded its arsenal of anti-access and area-denial weapons, presenting and projecting increasingly credible, layered offensive combat power across its borders and into the Western Pacific. China has or is acquiring the ability to: 1) hold large surface ships, including aircraft carriers, at risk (via quiet submarines, advanced anti-ship cruise missiles (ASCMs), wire-guided and wake-homing torpedoes, or anti-ship ballistic missiles); 2) deny use of shore-based airfields, secure bastions and regional logistics hubs (via conventional ballistic missiles with greater ranges and accuracy, and land attack cruise missiles); and, 3) hold aircraft at risk over or near Chinese territory or forces (via imported and domestic fourth generation aircraft, advanced long-range surface-to-air missile systems, air surveillance systems, and ship-borne air defenses). Advances in China's space-based reconnaissance and positioning, navigation, and timing, as well as survivable terrestrial over-the-horizon targeting, are closing gaps in the creation of a precision-strike capability."

China's growing anti-access capabilities have been discussed at length in DefenceToday, and many others. The reality is that China is rapidly approaching the level of capability where it will be able to deny the Americans the use of most of their West Pacific regional basing infrastructure, which comprises Guam, Kadena, Yokota and a host of other sites in the Marianas and Japan. This denial would be via terminally guided ballistic missile and cruise missile attacks, which would render these unhardened bases completely unusable for operations. No differently, the mix of cruise missiles and terminally guided "Anti Ship Ballistic Missiles" (ASBM) being deployed would make the operation of carrier battle groups within a 1,000 nautical mile distance of China's coast extremely risky – a single guided DF-21 has the potential lethality to sink an aircraft carrier or amphibious ship. The ASBM technology is similar to that developed during the 1970s for the US Pershing II IRBM, and is based on acquired Russian ASBM guidance technology.

"Regional Conventional Strike. Since 2000, China has continued its build-up of conventional ballistic missiles, building a nascent capacity for conventional short-range ballistic missile (SRBM) strikes against Taiwan into what has become one of China's primary instruments of coercion, not only of Taiwan but of other regional neighbors.

In 2000, China's SRBM force was limited to one "regimental-sized unit" in southeastern China. China has expanded the force opposite Taiwan to seven brigades with a total of 1,050-1,150 missiles, and is augmenting these forces with conventional medium-range ballistic missile (MRBM) systems, such as the anti-ship ballistic missile, and at least two land attack cruise missile (LACM) variants capable of ground or air launch. Advanced fighters and bombers, combined with enhanced training for nighttime and overwater flights, provide the PLA with additional capabilities for regional strike or maritime interdiction operations."

The most important development in this area is the H-6K 'Turboprop Badger' which is a deep redesign of the Soviet era H-6/Tu-16 Badger, powered by what appear to be clone Russian DF30K fan engines, common to the Russian Il-76 Candid airlifter. This aircraft appears to have displaced the Tu-22M3 Backfire from the PLA wishlist, and will be capable of carrying up to seven Tomahawk class land attack or anti-ship cruise missiles, and reaching targets at ranges well in excess of 2,000 nautical miles. This is a capability not unlike Britain's long retired V-bomber force.

"Competing for Dominance of the Electromagnetic Spectrum. The 2000 edition of this report observed that China is "working to ameliorate weaknesses in C4I training and place increased emphasis on 'electromagnetic warfare' to degrade or destroy enemy operational systems." At that time, the PLA's electronic warfare (EW) systems were derived mostly from a combination of 1950s-1980s technologies. By the 2006 edition of this report, China's investments in advanced EW programs had given the PLA Air Force "technological parity with or superiority over most potential adversaries." By improving space-based and terrestrial C4ISR and by moving communications infrastructure to fiber, China is hardening its own capabilities while making gains in developing weapon systems (e.g., counterspace, computer network operations, and anti-radiation systems) to deny these capabilities to others. The 2004 introduction of the PLA concept of "local wars under conditions of informatization" has guided development in this area, positioning the PLA to contest electromagnetic dominance in the early phases of future campaigns."

Much of China's intellectual investment in developing modern indigenous military capabilities has been in technologies and tactics intended to defeat or frustrate the historical advantage held by the Americans and their allies in Intelligence Surveillance Reconnaissance capabilities, and computer networking. There is ample evidence now that this strategy is yielding visible returns on investment.



The indigenous H-200 phased array engagement radar.

Two notable events produced considerable media coverage earlier this year. The first of these was the discovery by a team of cyberwar experts in Canada, including the Munk Centre at the University of Toronto, of a global hacking network originating in China and used to penetrate computers on a global scale:

"This report documents the GhostNet - a suspected cyber espionage network of over 1,295 infected computers in 103 countries, 30 per cent of which are high-value targets including ministries of foreign affairs, embassies, international organizations, news media, and NGOs."

The technology employed in this system leveraged a number of well established techniques to gain Trojan horse entry into victim computers to enable access to and retrieval of documents:

"An email message arrives in the target's inbox carrying the malware in an attachment or web link. The attacker's objective is to get the target to open the attachment or malicious link so that the malicious code can execute. ... The targeted user proceeds to open the attachment or malicious link. Once opened, the infected file or link exploits a vulnerability on the user's machine and installs the malware on the user's computer, along with a seemingly benign file. From the user's perspective, the infected document will often open normally, leaving the user unaware of the infection that just took place. ... After infecting the target, the Trojan packed in the Word document performs a DNS look-up to find its control server and then connects to that server."

The Canadian team gained access to the control servers and were able to penetrate the Ghostnet network, and assess what computers had been infected.



The LD-2000 Gatling gun is capable of killing smart munitions as they close on their targets.



The J-11B is a sophisticated derivative of the Su-27SK rather than a clone, with internal systems much closer to current built Russian Flankers.

The second interesting disclosure was a recent leak to the Wall Street Journal claiming that Chinese hackers had penetrated a number of computers storing documentation and design data for the Joint Strike Fighter, and claimed that Terabytes of data were downloaded. The US DoD and Lockheed-Martin produced carefully worded denials that anything of value was stolen, but the original leak stated that exactly what was stolen was unknown and still being assessed.

China's capabilities in cyberwar are clearly growing, and the scale of both of these incidents shows a strong investment in developing skills and technical capabilities, as well as robust staffing. Neither of these incidents can be attributed to anything other than a state sponsored effort, even if in either instance the agencies involved were not identifiable other than by Chinese network addresses.

Chinese military thinking on modern ISR and counter-ISR techniques is not confined to cyberwar. At least one attack using a high power laser weapon against a US low orbit ISR satellite has been documented, and China also produced headlines globally when it employed a modified DF-21 IRBM launch vehicle to intercept and destroy a defunct weather satellite in a medium earth orbit.

Another unique Chinese development has been the FT-2000 anti-radiation Surface to Air Missile, derived from the Russian S-300PMU series system, but equipped with a wideband 2-18 GHz coverage passive homing seeker design to guide the missile, silently, against emitting ISR platforms like the RQ-4 Global Hawk, E-3 AWACS or E-8 JSTARS.

Increasingly, China is promoting its indigenous weapons technology in the global market, targeting nations that are under embargo by the West and who may have more complicated relationships with Russia, the supplier of choice for such players.

Late last year China launched an export drive promoting the FD-2000 Surface to Air Missile system, better known as the HQ-9. This system is a Chinese design using licensed Russian technology from the S-300PMU / SA-10C/D Grumble and S-300PMU1 / SA-20A Gargoyle. While the Chinese HQ-9 only achieves 85 per cent of the engagement range of the Russian SA-20A, it is cheaper to purchase and its HT-233 engagement radar retains the high mobility and jam resistance of its Russian ancestor. The FT-2000 anti-radiation round is inherently compatible, sharing launch tube, vehicle and much of its airframe, propulsion and guidance design.

To date, two of the bigger buyers of Chinese SAMs have been Pakistan and Iran, both of whom procured multiple batteries of the Chinese re-engineered S-75/SA-2, the HQ-2. Reports have emerged that Iran is to buy or has bought the FD-2000/HQ-9, but no convincing evidence has emerged to date.

Last year Google Earth imagery emerged showing a HQ-2/SA-2 SAM site in northern China equipped with SM-90 SA-2 launchers, but with the Soviet era Gin Sling engagement radar replaced by a new technology H-200 phased array, used with the new KS-1A SAM. If the H-200 has been integrated with the HQ-2, this has important ramifications as it would improve the potency and jam resistance of the HQ-2, and would be a hot export product with the many nations still operating SA-2 variants.

Another interesting Chinese air defence weapon now being offered for export is the LR66 / Type 347G / LD-2000 Self Propelled Anti-Aircraft Gun (SPAAG), which mounts a 30 mm Gatling gun based radar directed weapon on a high mobility 8 x 8 truck. This system is a defacto clone of the Thales Goalkeeper system used on various NATO warships, and is analogous to the US Phalanx used by the RAN. The LD-2000 has considerable potential as a terminal defence weapon used to protect SAM batteries and radars from smart munitions such as the US AGM-88 HARM series, AGM-158 JASSM and RGM-109 Tomahawk, but to date there have been no disclosures on integration with phased array engagement radars like the new H-200 series. A Chinese product which has emerged recently and would be a natural supplement to the LD-2000 is the RWE-1 active radar Missile Approach Warning System (MAWS), intended to cue air defence weapons against incoming smart weapons.

China's sustained effort to absorb, adapt and improve foreign technology for domestic and export market use has not been limited to air defence radars and missiles. Last year a major scandal erupted in the Russian press over the unauthorised reverse engineering and production of the Shenyang J-11B, based on the Russian Su-27SK Flanker B variant. While the Russian press claimed it was a clone, careful examination of Chinese marketing literature and imagery show that the J-11B uses a cloned airframe and engines, but its systems are mostly indigenous, including a new glass cockpit, Onboard Oxygen Generator Systems (OBOGS), an optical MAWS and a planar array radar. This makes the J-11B much closer in technology to contemporary Russian Flankers than the 1980s Su-27SK it was based upon.

The media furore over the J-11B coincided with reports that China intends to buy around 50 Su-33 Flanker D naval fighters for the Varyag, currently being fitted out at Dalian. Earlier this year the Chinese media ran a series of reports discussing the intended construction of three or more aircraft carriers in this class.

In conclusion there is no end in sight at this stage to China's military growth, which encompasses not only deployed military systems, but also deep growth in the sophistication of Chinese built military equipment. If the United States does not accelerate the recapitalisation of its Cold War era weapons inventory, there is every prospect that China will displace the United States as the dominant military power in this region by 2015.

Further Reading:

http://www.defenselink.mil/pubs/pdfs/China_Military_Power_Report_2009.pdf

<http://www.f-secure.com/weblog/archives/ghostnet.pdf>

<http://www.ausairpower.net/APA-PLA-IADS-SAMs.html>

<http://www.ausairpower.net/APA-PLA-Div-ADS.html>

<http://www.ausairpower.net/APA-PLA-IADS-Radars.html>

<http://www.ausairpower.net/APA-SinoFlanker.html>