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## Anti-Access Measures in Chinese Defense Strategy

ROGER CLIFF

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Testimony presented before the U.S. China Economic and Security Review  
Commission on January 27, 2011

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**The RAND Corporation**

***Anti-Access Measures in Chinese Defense Strategy<sup>2</sup>***

**Before the U.S. China Economic and Security Review Commission**

**January 27, 2011**

Chairwoman Bartholomew, Chairman Wortzel, Commissioners. Thank you for the opportunity to testify before the Commission on this topic.

As I have testified before this Commission in the past, China's military is modernizing rapidly, but still has a long ways to go before it reaches the level of the U.S. military. According to its 2006 defense white paper, the Chinese military's goal is to have made "major progress" in its modernization by 2020 and be capable of winning a high-technology conflict by the middle of the century.<sup>3</sup> They are probably being modest about the rapidity with which they hope to catch up to the United States, but nonetheless they probably do not expect to be our equals any time before 2020. The challenge for them, therefore, is how to prevail in a conflict with the United States if one were to occur before then.

The problem of defeating a better-equipped adversary, however, is one that the People's Liberation Army (PLA) has faced since its establishment in 1927. Chinese military strategists, therefore, have a long tradition of developing strategies and tactics for defeating a superior military. What has changed is the type of conflict they expect to be involved in. During the 1920, 1930s, and 1940s, they were fighting wars of survival against the armies of the Kuomintang government and Japan. During the 1950s, 1960s, and 1970s, they were concerned about a large-scale invasion of China, first from the United States and later from the Soviet Union. By the 1980s they were no longer concerned about a large-scale invasion, but began writing about the

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<sup>1</sup> The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of RAND or any of the sponsors of its research. This product is part of the RAND Corporation testimony series. RAND testimonies record testimony presented by RAND associates to federal, state, or local legislative committees; government-appointed commissions and panels; and private review and oversight bodies. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

<sup>2</sup> This testimony is available for free download at <http://www.rand.org/pubs/testimonies/CT354/>.

<sup>3</sup> State Council of the People's Republic of China, *China's National Defense in 2006*. As of December 18, 2011, available at: <http://eng.mod.gov.cn/Database/WhitePapers/2006.htm>.

possibility of “local wars under modern conditions” (and indeed fought a limited war with Vietnam in 1979). After 1991’s Operation Desert Storm they began referring to “local wars under *high-technology* conditions” and, since 2004, have described the type of conflict they are preparing for as “*informationized* local wars.”

The term that the Chinese military uses to describe its overall defense strategy is “Active Defense.” Active Defense is said to feature “defensive operations, self-defense and striking and getting the better of the enemy only after the enemy has started an attack.”<sup>4</sup> Active Defense is not a new term; the Chinese military has described its defense strategy as Active Defense since 1960s. Just as the type of conflict the PLA has prepared for has evolved over time, however, the specific content of Active Defense has also changed. In 1993 a new set of military-strategic guidelines(军事战略方针) called “Active Defense for the New Period,” and in 1999 the Chinese military issued a new set of doctrinal regulations (战役纲要 and 战斗条令) that describe the Chinese military’s assessment of how its military forces should be employed in the early 21<sup>st</sup> century. These doctrinal regulations are classified, so I have not seen them. However, we who study the PLA are able to acquire official textbooks and reference books that we believe are based on these regulations and from these textbooks and reference books infer the PLA’s principles for conducting military operations.

I should note that, while we in the United States frequently refer to China as having an anti-access strategy, the Chinese military does not think in those terms. Several of my RAND colleagues and I did a study of Chinese anti-access measures that was published in 2007 and, at the time we did the study, we could find no instances of the use of a term equivalent to “anti-access” in Chinese military publications, and the only use I have seen since then has been references to our book.<sup>5</sup> Instead, as suggested above, the focus of Chinese thinking about military operations has been on the broader problem of how to defeat a militarily superior adversary. The Chinese term for their approach to this broader challenge is “using inferiority to defeat superiority” (以劣胜优). Chinese doctrinal writings describe a wide range of actions and tactics consistent with how a militarily inferior country might defeat a militarily superior country, however, and many of these are things that we in the United States would regard as anti-access tactics. Thus, although China cannot be said to have an explicit anti-access strategy, their likely

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<sup>4</sup> State Council of the People’s Republic of China, *China’s National Defense in 2008*. As of December 18, 2011, available at:<http://eng.mod.gov.cn/Database/WhitePapers/2008.htm>.

<sup>5</sup> Roger Cliff, Mark Burles, Michael S. Chase, Derek Eaton, Kevin L. Pollpeter, *Entering the Dragon’s Lair: Chinese Anti-access Strategies and Their Implications for the United States* (Santa Monica, CA: RAND Corporation, 2007).

strategy for defeating the United States in the event of a conflict contains virtually all of the elements of what we would consider to be an anti-access strategy (plus other things as well).

### **Chinese Strategic Principles with Access Denial Implications**

Several strategic principles with implications for why and how China might try to deny a militarily superior adversary access to the western Pacific can be found in publications of the Chinese military on strategy and operations.<sup>6</sup> The first of these is the importance of avoiding a direct confrontation with the forces of such an adversary. Direct confrontation with a superior adversary almost guarantees defeat for the inferior force. Chinese military publications, therefore, emphasize avoiding direct confrontation with the adversary's forces and instead seeking points of weakness and vulnerability. Denying an adversary access to the region is consistent with this principle as it implies attacking the adversary's transportation, bases, and other facilities and systems besides its main combat forces, and preventing the adversary from deploying its combat forces into the region will in turn enable China to avoid a direct confrontation with the adversary's forces.

The second strategic principle is seizing the initiative early. This contrasts with the protracted war concept envisioned in the 1960s and 1970s, whereby Chinese military planners intended to allow the adversary to hold the initiative early and only after the adversary had overextended itself and worn itself out would the PLA take the initiative from it. The Chinese conception of informationized local wars, however, is one of rapid-paced, short-duration conflicts. Under such circumstances, seizing the initiative early on will be critical to the conflict ending on terms favorable to China. Denying or slowing an adversary's access to the theater of conflict is consistent with seizing the initiative early as limiting the amount of forces the adversary has in the theater during the initial stages of conflict will provide the PLA with a local force ratio that contributes to its ability to seize and hold the initiative. Seizing the initiative early, moreover, will enable the PLA to conduct the type of operations needed to limit an adversary's ability to deploy into the theater.

A third relevant strategic principle, which is closely related to the second, is the value of achieving military surprise. Surprise is seen as potentially necessary to seizing the initiative from a superior adversary and as best achieved early on in a conflict, before the adversary has had a chance to build up its strength. Denying or slowing an adversary's access to the theater of conflict is thus consistent with achieving surprise, as doing so will lengthen the period of time before the

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<sup>6</sup> For more detail on these strategic principles, see Cliff et al., *Entering the Dragon's Lair*, pp. 27-41.

adversary's forces in theater have been built up. As will be discussed later, moreover, surprise can greatly increase the effectiveness of many anti-access actions.

A fourth strategic principle relates closely to the principles of seizing the initiative early and the value of achieving surprise. This is the principle of preemption, of attacking an adversary while that adversary is still in the midst of preparing to launch offensive operations against China. Preemption is seen as an excellent way of seizing the initiative as well as of achieving surprise. Preemption also strongly supports the concept of employing access-denial measures as, if an adversary is allowed time to fully build its forces up in theater, the effectiveness of access-denial measures will be greatly reduced. If, on the other hand, a preemptive attack is launched well before the adversary is fully prepared for conflict, then anti-access measures can lengthen the amount of time that the local military advantage preemption provides will last.

A fifth strategic principle with implications for access denial is the principle of conducting "key-point strikes" (重点打击). This concept is based on the idea that, rather than attempting to destroy an adversary's entire military force, the PLA should try to paralyze the adversary by attacking critical nodes in its system of systems (a concept that will be quite familiar to Gen Deptula, who will be testifying later today). These critical nodes include the adversary's command systems, information systems, logistic systems, and the linkages between the adversary's systems. Attacking an adversary's logistic systems can obviously affect the adversary's ability to deploy into the theater of conflict but, as I will discuss later, attacks on command systems, information systems, and the linkages between systems can also potentially have the effect of denying an adversary access to the region.

A sixth strategic principle, which supports many of the other principles described above, is the principle of "concentrated attack." This principle states that, rather than husbanding forces for a protracted conflict and distributing the best capabilities throughout the force, the best capabilities should be collected together and used for high-intensity attacks on vital targets early on in the conflict. This principle obviously complements the principle of key-point strikes, but also supports the ideas of surprise, preemption, and seizing the initiative early. Surprise and preemption will be most effective if the best forces are used on a large-scale, and the more effective surprise and preemptive attacks are, the easier it will be to seize the initiative.

A final strategic principle with implications for access denial is the importance of achieving information superiority. Information superiority is seen as critical to prevailing in a conflict and preemption and surprise are seen as important to achieving information superiority. And, as I will

discuss later, achieving information superiority within the theater of conflict is in turn a key element of a successful anti-access campaign.

### **Anti-Access Measures in Chinese Military Doctrine**

Beyond the broad strategic principles described above, authoritative Chinese military publications advocate a variety of specific military operations with potential effects.<sup>7</sup> These can be grouped into attacks on the bases and platforms from which adversary combat aircraft would operate; attacks on adversary systems and facilities used to transport, supply, and repair and maintain forces in the theater; and attacks on adversary systems used to collect, process, and disseminate information for forces in the theater.

“Attacks on the bases and platforms from which adversary combat aircraft would operate” refers to attacks on enemy air bases and aircraft carriers. Damaging or destroying an enemy’s air bases and aircraft carriers would prevent the enemy’s combat aircraft from contributing to combat operations within the theater and thus would be equivalent to denying the aircraft access to the combat theater, even if aircraft were in the theater on the ground. Successful attacks on air bases and aircraft carriers, or even the *threat* of successful attacks, moreover, would likely have the effect of deterring the deployment of additional aircraft into the theater.

Chinese military publications emphasize the value of attacking enemy air bases, with specific targets at those air bases including the runways, aircraft parked in the open, command-and-control systems, fuel and ammunition supplies, air crews, and support facilities and personnel. Successful attacks on most of these targets would render the air base unusable for combat operations. If only the aircraft were destroyed or the air crews killed then in theory the base would still be usable if additional aircraft or air crews were flown in, but the success of such attacks might deter further combat operations from being attempted from the base in question. Means identified for attacking these targets include ballistic missiles, cruise missiles, aircraft armed with precision-guided munitions, and special operations forces or covert operatives.

Chinese military publications also emphasize the importance of neutralizing enemy aircraft carriers. Aircraft carriers are seen as powerful offensive weapons but also as having potential vulnerabilities. They are seen as particularly vulnerable while redeploying, transiting narrow waterways, when undergoing resupply, and when the weather is bad. Chinese military publications indicate that considerable effort would be devoted to detecting and tracking enemy

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<sup>7</sup> For more detail, see Cliff et al., *Entering the Dragon’s Lair*, pp. 51-76.



aircraft carriers and, when an opportunity arose, the PLA would attempt to overwhelm the carrier's defenses with a large-scale attack. Potential means of attack identified include anti-ship cruise missiles (launched by aircraft, surface ships, or submarines), torpedoes (launched by submarine), sea mines, and ballistic missiles. Note that such attacks would not need to sink the aircraft carrier to be effective. Since an aircraft carrier's purpose is to act as a base for combat aircraft, it would be sufficient for China's purposes to just damage the flight deck or otherwise render the carrier unable to conduct flight operations. Particularly if the conflict is of short duration, the war could be over before repairs sufficient to return the carrier to combat operations were complete.

An alternative approach to neutralizing a carrier would be to prevent it from receiving additional supplies at sea. According to Chinese military publications, an aircraft carrier consumes an immense amount of supplies. If supply ships were prevented from reaching the aircraft carrier, it would soon exhaust its stores of aviation fuel and munitions and no longer be able to conduct combat operations.

A second category of military operations with potential anti-access effects is attacks on adversary systems and facilities used to transport, supply, and repair and maintain forces in the theater. Some of these systems and facilities will, of course, be located on air bases, attacks on which have already been mentioned. These include runways, which are used by transport and aerial refueling aircraft, not just combat aircraft, fuel and ammunition supplies, and support facilities and personnel. Other systems and facilities used to transport, supply, and repair and maintain forces in the theater that are identified in Chinese military publications include the transport and aerial refueling aircraft themselves; naval troop transports, cargo ships, tankers, and underway replenishment ships; naval ports and associated facilities; facilities for the storage and distribution of fuel, ammunition, and other supplies other than those on air bases (which have already been mentioned); and ground transportation infrastructure and systems including roads, railways, bridges, ground transport vehicles such as trucks and trains, and fuel pipelines. Effective attacks on these targets could either prevent an adversary's forces from deploying into the theater of conflict, or render them unable to conduct combat operations (e.g., due to a lack of fuel, ammunition, or spare parts) while in the theater.

Means identified for attacking systems and facilities used to transport, supply, and repair and maintain forces in the theater include ballistic missiles, cruise missiles, aircraft armed with precision-guided munitions, and special operations forces or covert operatives for fixed facilities, aircraft on the ground, or ships in port; long-range surface-to-air missiles and aircraft armed with long-range air-to-air missiles for transport and aerial refueling aircraft while in the air; and anti-

ship cruise missiles (launched by aircraft, surface ships, or submarines), torpedoes (launched by submarine), and sea mines for ships at sea.

A third category of operations with potential anti-access effects advocated by Chinese military publications is attacks on adversary systems used to collect, process, and disseminate information for forces in the theater (usually referred to as “command, control, communications, computer, intelligence, surveillance, and reconnaissance” or “C<sup>4</sup>ISR” systems). Although attacks on such systems would not necessarily prevent forces from deploying into or operating in the theater of conflict, such attacks could nonetheless have an anti-access effect by interfering with command, control, and communication or surveillance and reconnaissance capabilities within the theater to the extent that the adversary commander would prefer to operate his or her forces from bases farther from the locus of conflict.

Specific targets of this type identified in Chinese military publications include satellites, land-based and airborne early warning radars, communications infrastructure, command posts, and computer networks. Means of attack mentioned include jamming, anti-satellite weapons, ballistic missiles, cruise missiles, aircraft with long-range air-to-air missiles, stealth aircraft, computer network operations, and electromagnetic pulse weapons.

## **Conclusion**

As noted at the beginning of my testimony, China does not have an explicit anti-access strategy. Rather, the strategic principles and force employment concepts that the PLA has developed as the current embodiment of its “Active Defense” strategy would be better described by U.S. military analysts as an “asymmetric strategy.” That is, they are ways in which a country with less-advanced military capabilities might seek to diminish the advantage enjoyed by a country with greater military capabilities. These strategic principles and force employment concepts, however, imply a variety of military actions that have potential anti-access effects.

It is clear, moreover, that these concepts are not just academic musings disconnected from actual planning and force development in the PLA. Over the past decade and a half the PLA has systematically acquired many of the capabilities needed to implement these anti-access concepts. These capabilities include ballistic missiles capable of accurately striking fixed targets as well as ships at sea, land-attack cruise missiles, long-range strike aircraft, long-range surface-to-air missiles, quiet submarines, supersonic anti-ship cruise missiles, and, as recently revealed, stealth aircraft.

Interestingly, many of these systems are capable of attacking targets at approximately similar ranges from Chinese territory – roughly 1,500 kilometers (about 900 miles) or so. The conventional land-attack and anti-ship versions of the DF-21 ballistic missile apparently have this range as does the CJ-10 (formerly known as DH-10) ground-launched cruise missile, and this is also the reported combat radius of the H-6 and JH-7 naval strike aircraft and Su-27/Su-30/J-11 fighter.<sup>8</sup> I would not be surprised if China's newly revealed stealth fighter, which appears to be a relatively large aircraft, turns out to have a similar combat radius.

Chinese strategic writings refer to the “first island chain” and “second island chain.” The first island chain extends from the Kurile Islands, through the main islands of Japan, the Ryukus, the Philippines, and Borneo. The second island chain extends through the Marianas and Micronesia. See Figure 1.

As can be seen in Figure 2, the majority of U.S. air and naval bases in the western Pacific region, as well as the areas in which U.S. carrier strike groups would likely operate in the event of a conflict with China, fall on or within the first island chain and are within 1,500 km of Chinese territory, meaning that they are potentially subject to attack by Chinese ballistic missiles, cruise missiles, and strike aircraft. The one exception to this – so far – is the air and naval facilities on the island of Guam, which falls on the second island chain. Thus, it appears that Chinese military planning force development for the past decade or so has been focused on acquiring capabilities to prevent U.S. forces from operating from on or within the first island chain. The successful achievement of that objective would have a major impact on U.S. operations in the western Pacific because, as can be seen, there is only one location in the western Pacific – Guam – where there are U.S. air and naval bases outside of the first island chain. Once China has acquired the capability to deny U.S. forces access to the first island chain moreover, Chinese military planners will likely shift their focus of attention to the second island chain.

Comparing the military capabilities China has acquired over the past decade or so with the force employment concepts found in Chinese writings and the locations of U.S. air and naval bases and operating areas in the western Pacific, one cannot but be impressed by the systematic and methodical way in which the PLA has gone about acquiring the capabilities needed to successfully implement those concepts. It is clear that we are dealing with a military that is focused and serious about finding ways in which to defeat us should a conflict occur. Although the ongoing conflicts in Southwest Asia will rightly remain the emphasis of U.S. military resources and planning for the time being, we also need to engage in an effort to acquire the capabilities to

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<sup>8</sup> According to the *Jane's All the World's Aircraft* entries for the H-6, JH-7, and Su-27.

counter those that China is acquiring that are at least as focused and systematic as those which China is engaged in.

**Figure 1: First and Second Island Chains**



Source: Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China*, 2010.

Figure 2: Areas of the Western Pacific Most Vulnerable to Chinese Anti-Access Measures

