



## Deflecting the Assassin's Mace: The Pentagon's New AirSea Battle Concept and its Strategic Relevance to India

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## Summary

AirSea Battle, the latest brainchild of the Pentagon, may seem far removed from the Indian military's preoccupations. After all, India has only just initiated its transition to network-centric warfare, and the conflict scenarios it faces in the Indian Ocean Region do not seem to bear much resemblance to those currently rippling through the WPTO. Nevertheless, Indian strategists may well find that many of the tactical quandaries faced today by the US carrier fleets cruising through the Asia Pacific are destined to become those of the Indian Navy in the not-too-distant future. Pakistan's troubling mimicry of Chinese naval strategy, whether it be through its emphasis on A2/AD or on subsurface warfare, would indicate that it too will attempt in time to offset India's growing conventional and technological edge by brandishing its own "assassin's mace". Hopefully, by then, India will have devised its own AirSea Battle concept, enabling it to parry the blow and reassert sea control.

Over the past year, a whispering chill has settled over the waters of the Asia-Pacific, and as Sino-US relations continue their downward plunge, all talk of an emergent G2 axis based on mutual understanding and cooperation seems increasingly blithe. Already marred by a series of naval stand-offs in 2009, ranging from the harassing of the USNS Impeccable in the South China Sea to a mysterious collision between a Chinese submarine and the USS John McCain's towed sonar array off the coast of the Philippines, Sino-US took a further blow earlier this year when Beijing unilaterally decided to freeze all military-to-military contacts in response to the official confirmation of a long-announced 6.4 billion dollar arms transfer to Taiwan. The 9<sup>th</sup> Asian Security Summit, or Shangri-La Dialogue, held in Singapore last month, was the scene of tense verbal exchanges between US Secretary of Defence Robert Gates and General Zhu Chenghu of the Beijing National Defence University. This came only days after the Defence Secretary's proposed fence-mending visit to the Chinese capital had been abruptly turned down.<sup>1</sup>

The Chinese government's snub, cryptically imputed to the "*visit's inconvenient timing*," was a knee-jerk reaction not only to the Taiwan deal but also to the release of a new and potentially game-changing document named "*AirSea Battle: A Point-of-Departure Operation Concept*." This 123 page report, which was released by the increasingly influential Washington DC-based Centre for Budgetary and Strategic Assessments (CBSA) in May, could not be more different in tone from the Obama Administration's National Security Strategy, which preceded it by only a week or so. Indeed, while the latter expounds at length, and in rather woolly terms, the virtues of engagement, the AirSea Battle (ASB) concept, which has been subsequently validated by both the US Air Force and the Navy, is a terse, concise call for greater jointness between the two services in the WPTO, or "*Western Pacific Theatre of Operations*", and is probably the most detailed blueprint for an armed Sino-US confrontation to have been released in the public domain for years.

While its authors take pains to stress that the report is in no way a manifesto in favour of containment of China, or of a roll-back of the PLA's military power, they do state quite clearly that the goal of ASB is to "*offset the PLA's unprovoked and unwarranted military build-up*."<sup>2</sup> This occurs at a time when China's growing anti-access and area-denial capabilities (A2/AD) have fostered fears that US power projection in the region may become not only increasingly difficult due to its stagnating naval force structure, but also particularly risk-prone, thus leading to a slow but inexorable decline of American influence in the Asia-Pacific Theatre. This has led to widespread concern, not only amongst the cognoscenti of the US policy-making world, but also in Asia, where fears of an impending security vacuum have sparked a naval arms race.

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<sup>1</sup> Peter J. Brown, "Gates Closed out of China," *Asia Times Online*, June 12, 2010, <http://www.atimes.com/atimes/China/LF12Ad02.html>

<sup>2</sup> *Air-Sea Battle: A Point-of-Departure Operational Concept*, CBSA, officially released on May 18, 2010, retrievable at <http://www.csbaonline.org/4Publications/PubLibrary/>

What follows is an attempt to shed some light on Asia's rapidly morphing security arena, first by briefly outlining the emerging fault lines and potholes currently shaking the regional military balance; and secondly by summarizing some of the main ideas underlying the ASB concept. It will then be argued that, notwithstanding the fact that the Indian Ocean's tactical environment differs greatly from that of the Western Pacific, India can nonetheless glean some valuable insights from AirSea Battle, most notably when it comes to countervailing Pakistan's vigorous efforts to implement a strategy of offensive sea denial.

## China's naval expansion and growing prowess in the field of A2/AD fuel regional anxieties

### Force stagnation versus force expansion - a shift in the Sino-US naval balance

Despite the fact that the US Navy, with its 11 nuclear-propelled carrier groups, still far outstrips in terms of sheer power projection any of its rivals, several observers in the US strategic community have been drawing attention to the gradual '*withering*'<sup>3</sup> of the US combat fleet, which today numbers about 280 ships in comparison to the peak of 597 reached during the Ronald Reagan era. Both surface and subsurface platforms have been affected, with the US submarine fleet having declined from 102 boats in 1991 to merely 53 today. This number is projected to dwindle even further, to approximately 41 in 2028. While the US fleet is expected to stay at a relatively stable level over the next few decades, oscillating between 280 and 313 vessels, many question the wisdom of choosing stagnation over expansion at a time when the Chinese Navy, which is already said to comprise at least 260 ships, including more than 75 principal combatants and 60 submarines, is engaged in a process of unremitting expansion.<sup>4</sup> Its submarine fleet, in particular, is a cause for concern.

Currently composed of six SSNs and 54 SSKs, half of which are the highly-effective Kilo, Song or Yuan class, the PLAN submarine flotilla, if it sustains its current rhythm of induction, is projected to vaunt 70 such vessels in the next ten to fifteen years.<sup>5</sup> In all likelihood, one or two medium-sized STOBAR ("short takeoff but arrested recovery system") carriers will also be launched in the course of the next decade, as well as a new class of more advanced destroyers. In the meantime, the recent publication of the US FY II Defence Budget only seems to compound the Pentagon's desire to funnel more resources into land-locked counter-insurgency campaigns than into bolstering naval deterrence in the Asia-Pacific. Several programmes have been axed by this renewed austerity, such as

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<sup>3</sup> Seth Cropsey, "The US Navy in Distress," *Strategic Analysis*, vol. 34, no. 1, January 2010, pp. 35-45.

<sup>4</sup> Bryan McGrath, "Do we Need 11 Carrier Groups: Yes," Atlantic Council, June 5, 2010, retrievable on <http://www.acus.org>

<sup>5</sup> Mackenzie Eaglen and Jon Rodeback, "Submarine Arms Race in the Pacific: The Chinese Challenge to US Undersea Supremacy," The Heritage Foundation Backgrounder no. 2367, February 2, 2010.

the Navy's next-generation cruiser or CGX. Also, rather than acquire more advanced Zumwalt Class Destroyers, the USN will settle for new derivations of the 1980s era Arleigh Burke Class Destroyers.<sup>6</sup>

The Obama Administration's decision to scrap the highly contentious European land-based ballistic missile defence system has also added considerable weight to the Navy's shoulders in terms of operational requirements, as its 79 Aegis-equipped destroyers are not only expected in the coming years to shield the Asian hemisphere from incoming missiles strikes, but also Europe as well.

### **Wasting Assets and Regional Lockout: two abiding American concerns**

This disquiet over the widening 'quantity gap' between the Chinese and US navies in the Asia-Pacific region has been exacerbated by the fact the America's traditional technological edge may falter in the face of China's "*Assassin's Mace*" or "*Shashoujian*" strategy. This exotic-sounding term has its roots in ancient Chinese folklore, which recounts how a hero wielding such a weapon managed to overcome a far more powerful adversary. Since then, it has come to mean in Chinese military strategy the capacity to rapidly and decisively seize the initiative and turn the tide to one's advantage when confronting a conventionally superior foe.<sup>7</sup> This is embodied in the PLA's intense focus on A2/AD, via the mass acquisition of those most stealthy tools of sea-denial, the submarine, and, more recently, on the induction of the world's first anti-ship ballistic missile, the DF-21. China has long sought to counter US carrier dominance in the Taiwan Strait by fielding such a carrier-killer missile, and its development reportedly gained fresh impetus after the 1995-1996 Taiwan missile crisis, when the deployment of two US Carrier Battle Groups to the region nurtured intense feelings of helplessness and frustration amongst Chinese military officials.<sup>8</sup> The *Assassin's Mace* combines China's growing prowess in the field of A2/AD with its tactical approach to "*waging a local war under conditions of informatization*", which consists of a pre-emptive "*blinding*" assault against US information systems via Anti-Satellite Warfare (ASAT) and wide scale cyber attacks.

China's blinding strategy has long been studied and taken into account by American military strategists, but it is above all Chinese strides in the field of A2/AD that have kindled trepidation of late.

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<sup>6</sup> Sam LaGrone, "Uncle Sam Shuns Big Ships as Funding Pressures bite," *Jane's Navy International*, April 2010.

<sup>7</sup> See Alastair Iain Johnston, "Toward Contextualizing the Concept of a Shashoujian (Assassin's Mace)," retrievable at <http://www.people.fas.harvard.edu/~johnston/shashoujian.pdf>.

<sup>8</sup> Andrew S. Erickson and David D. Yang, "Using the Land to Control the Sea? Chinese Analysts Consider the Anti-ship Ballistic Missile," *Naval War College Review*, Autumn 2009, vol. 62, no. 4, pp. 53-86.

The sudden annihilation of lightly defended American forward bases in Okinawa and Guam under a barrage of China's increasingly large number of conventionally armed ballistic missiles is an abiding concern, as is that of US carrier groups becoming *wasting assets*, as their growing vulnerability to Chinese aircraft and submarines armed with high-speed sea-skimming ASCMs (anti-ship cruise missiles) or to the DF-21 risks rendering them operationally irrelevant. This irrelevance would be further accentuated by the fact that the carriers carry short-range strike aircraft, which would be compelled to operate well within Beijing's anti-ship ballistic missile strike range.<sup>9</sup>

These apprehensions are clearly expressed in the executive summary of the ASB Concept, which states the following, "*The Chinese PLA's ongoing effort to field anti-access/area-denial (A2/AD) capabilities are threatening to make US power projection increasingly risky, and in some cases and contexts, prohibitively costly. If this occurs, the US will find itself effectively locked out of a region that has been declared a vital security interest by every administration in the last sixty years. It will also leave longstanding US allies and partners vulnerable to aggression or, more likely, to subtle forms of coercion.*"

The last sentence bears scrutiny. Indeed, there are signs that this gradual shift in the balance of naval power has encouraged China to engage in more assertive naval actions over the past eighteen months. Chinese naval patrols circling the Spratly Islands have more than doubled, and over 200 Vietnamese fishermen have been rounded up and detained off the Paracels, which were also the scene of a mass joint exercise earlier this year. Further east, a task-force of ten Chinese vessels, including submarines and missile-guided destroyers, ploughed its way through Japanese territorial waters, and reacted to its shadowing by a Japanese maritime self-defence flotilla by buzzing it with a helicopter, which led to Tokyo's decision to lodge an official complaint.

China's diplomatic parlance has also undergone a distinct shift, with Beijing's claims of sovereignty in the South China Sea having been elevated to the level of "*core interest*", on a par with its claims over Taiwan and Tibet.

Meanwhile, a wide panoply of states in the region, ranging from Australia to Vietnam, have chosen to express their restiveness by ramping up their naval forces. Canberra, which has decided to engage in its largest naval build-up since World War II, more than doubling its submarine fleet from 6 to 12 vessels, has explicitly linked this decision to the changing regional security environment and its desire to no longer solely rely on the American security guarantee.<sup>10</sup> Japan's naval procurement plans are also clearly influenced by Chinese systems, with the Japanese Maritime self-defence force deciding to invest in new

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<sup>9</sup> <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N04/386/26/PDF/N0438626.pdf?OpenElement>

<sup>10</sup> See Jack McCaffrie and Chris Rahman, "Australia's 2009 Defense White Paper: A Maritime Force for Uncertain Times," *Naval War College Review*, Winter 2010, vol. 63, no. 1, pp. 63-75.

anti-submarine and helicopter systems in the shape of the Huygu class DDH. Southeast Asian nations, for their part, are engaged in what bears all the hallmarks of a sub-surface arms race.

Vietnam, for instance, has chosen to invest a significant portion of its 3.6 billion dollar annual defence budget in the 1.8 billion dollar acquisition of six state of the art Kilo class submarines from Russia. Singapore has announced its intention to acquire two modernized Västergötland class A17 air-independent propulsion-equipped submarines from Sweden, and Malaysia will soon induct its second Scorpene class submarine.<sup>11</sup>

### The US AirSea Battle Concept: Offsetting China's A2/AD capabilities and maintaining Sea Control

The AirSea Battle Concept attempts to reconcile two hard truths - the relative stagnation of the US naval force level in Asia, along with the quantum leaps China has made in the field of A2/AD. While wartime operations and scenarios are meticulously outlined, the avowed goal of the newly forged strategy is not to assert crushing US dominance over the Asian maritime theatre, but to ensure that American presence in the region remains a powerful deterrent to any form of Chinese expansionism or military adventurism.

#### From LandAir to LandSea

The AirSea Battle Concept calls for a seamless cooperation between the US Navy and Air Force, and uses as a conceptual template or '*metaphor*' the LandAir Battle Concept implemented by the US military in the early 1980s.

AirLand Battle was devised by the US Army and Air Force in circumstances that were similar, to a certain degree, to that of AirSea Battle. After more than a decade of irregular warfare in the jungles of Vietnam, the US military grew alarmed at the Soviet Union's creeping advances in military technology and warfighting skill which became apparent in the first stages of the Soviet-Afghan war. What's more, just as the current proponents of AirSea Battle have urged for the need to factor into planning the gradual shift in power dynamics in the WPTO, the architects of AirLand battle drew attention to the growth of conventional Soviet military power along the Eastern European front. Defence-in-depth was not a viable option, as the FEBA, or *Forward Edge of the Battle Area*, ran through NATO allies' territory. AirLand battle stressed the need for the Air Force and Army to operate synergistically, in order to "*see deep*", and "*shoot deep*", with Air Force and Army artillery strikes working in concert to soften up the enemy's rearguard formations, while Army divisions struck at the vanguard. Extending the battlefield deep into enemy territory via joint warfare and the induction of new ISR (Intelligence, Surveillance and Reconnaissance) platforms were the means through which the US military made the transition from an

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<sup>11</sup> Tim Fish, "Submarine Programmes Top SE Asian Wish Lists," *Jane's Navy International*, April 2010.

essentially static, defensive doctrine on the eastern continental front, to a more proactive, modern form of warfare, which emphasized rapidity and synergy.

### **The Substance of the Airsea Battle Concept**

In a similar fashion, AirSea Battle calls on naval and air coordination to counter an adversary's potentially game-changing rise in prowess, in this case China's A2/AD capabilities.

Airsea Battle is comprised of two interactive stages, the first focusing on repelling a pre-emptive Chinese strike and regaining the operational initiative, the second on creating options to resolve a prolonged conventional combat on favourable terms.

*"US and allied military forces can withstand initial large-scale Chinese conventional attacks, mitigate their effects, reduce the effectiveness of China's A2/AD system by rapidly blinding it, regain the strategic and operational initiative, and thereby set the stage for sustained follow-on operations."*

The core of AirSea Battle is what is termed the "scouting campaign", or "blinding campaign", during which both sides would conduct lightning strikes on each other's ISR and C2 and sensor networks in order to deny the adversary vital tactical information. This blinding campaign would involve fourth and fifth dimension warfare, and unfold in both the space and cyber domains, with offensive cyber attacks on space and ISR systems, kinetic and non-kinetic ASAT (anti-satellite warfare) through ballistic missile strikes or the use of newly developed directed-energy weapons.

Joint air and naval action are presented as a way of neutralizing China's A2/AD menace to the US Navy's carrier fleets, with air force counter-space operations targeting China's space-based maritime surveillance systems, and US Navy AEGIS-equipped destroyers contributing to the defence of vulnerable forward Air Force bases. Air Force planes would be called on to neutralize PLA missile boats with inadequate air defence, while Navy short-range strike aircraft would find themselves imparted a hunter-killer role in the elimination of Chinese airborne AWACs and AEW&C aircraft. One of the most pivotal stages in the conceptualized conflict revolves around the destruction of the PLA submarine fleet in the first island chain. The AirSea battle concept recommends a form of maritime quarantine of China's littoral, with anti-submarine barriers along the Ryuku islands and the Luzon Strait cordoning off potential escape routes for the PLA submarine fleets, and mobile mines and armed UUVs (Unmanned Undersea Vehicles) being sent into the danger zone via the US submarine fleet. These efforts would be supplemented by offensive mine laying operations conducted by Air Force stealth bombers.

These are a few of the measures and tactical recommendations outlined in the extremely detailed document, which point to a profound shift in the US's tactical perception of the

WPTO.

What can the Indian military, however, glean from AirSea Battle? At first glance, not that much. India's potential conflict scenarios revolve around the Arabian Sea and the Indian Ocean, and do not involve the same degree of network centrality, and thus such a need for blinding high-tech warfare. It will be argued, however, that when confronted with a small but increasingly hard-hitting Pakistan Navy intent on exerting a strategy of offensive sea denial, some of the recommendations put forward in the US AirSea Battle concept merit Indian consideration, particularly as it advances its own degree of network centrality, and moves, hopefully, towards greater inter-service interoperability.

## Towards an Indian AirSea Battle Concept?

### Pakistan's strategy of Offensive Sea Denial

Pakistan's naval posture is interesting in that it seems to replicate to a certain degree that of its Chinese partner's towards the United States. Indeed, both countries, when confronted with larger blue-water forces whose formidable power projection capabilities radiate out from carrier battle group nuclei, have opted for strategies of sea denial, with a heavy focus on submarines and anti-ship missile warfare.

A historical study of Pakistani naval tactics reveals the primacy it has doggedly accorded to submarines and maritime aircraft equipped with anti-ship missiles. Both in 1965 and 1971, Islamabad chose to consign its surface platforms to a layered coastal defence, while its submarines were sent out on an offensive role. In 1965, the presence of the Diablo class PNS Ghazi penned up the submarine-deprived Indian fleet, and facilitated Pakistan's naval bombardment of Dwarka, and in 1971 three Daphne class submarines were sent out to patrol the west coast, while the PNS Ghazi was dispatched, before being destroyed, to locate the INS Vikrant off the Indian eastern seaboard.<sup>12</sup>

Pakistan has consistently prioritized its small submarine fleet, often introducing new capabilities to the subcontinent; acquiring AIP (Air-Independent Propulsion) systems for its three Agosta 90B submarines, and enabling them to fire Harpoon anti-ship missiles while remaining submerged. A renewed emphasis has been placed on the submarine flotilla of late, as negotiations are underway for the purchase of three advanced Type-214 German submarines, also equipped with AIP. Rumours have also begun to surface of a major new defence deal with China, which would involve the acquisition of three new

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<sup>12</sup> For two excellent and most informative studies of Pakistani naval strategy since independence, see Vijay Sakhuja, "Pakistan's Naval Strategy: Past and Future", *Strategic Analysis*, vol. 26, Oct-Dec 2002, and Vijay Sakhuja, "Naval Policy and Strategy of Pakistan," *Air Power Journal*, vol.1, no. 2, September-December 2004.

<sup>13</sup> Fahram Bokhari, "Pakistan begins submarine procurement talks with China," *Janes Defence Weekly*, June 11, 2010.

advanced diesel-electric submarines<sup>13</sup> (reportedly Song class).

The Pakistan Navy has sought to supplement its submarine fleet's already potent anti-ship capabilities by equipping its helicopters and maritime reconnaissance aircraft, such as the recently upgraded P3 C Orions, with Exocet missiles. Pakistan has also reportedly recently acquired 120 Chinese C802 long-range anti-ship cruise missiles.

Only a few months ago, Pakistan chose to vaunt its burgeoning A2/AD capabilities, and the waters of the Arabian Sea were roiled by a massive firepower drill. A variety of different missiles and torpedoes fired from warships, submerged submarines and maritime aircraft were displayed in a singularly blunt message to "*nefarious forces*".<sup>14</sup>

### Tactical Recommendations

While there is little doubt that the Indian Navy still retains a sizeable conventional superiority over its Pakistani counterpart, there is a genuine risk that Islamabad's progress in the field of A2/AD will render any Indian naval operation in the Arabian Sea prohibitively hazardous, with major Indian surface platforms becoming wasting assets if compelled to remain out of reach of Pakistan's anti-ship missiles. Notwithstanding the major differences between the theatres of operation and forces in presence in both conflict scenarios, some elements of AirSea Battle can be used to ensure future sea control.

### Towards IAF/IN Jointness

In order to counter Pakistan's strategy of offensive sea denial, greater jointness between the Indian Air Force and Navy is a prerequisite. The proximity of major Indian air bases along India's western coast means that Air Force assets can easily come to the Navy's assistance by engaging in strikes against anti-ship cruise missile launchers, or by targeting smaller missile boats with inadequate Air Defence Systems. The Indian Air Force can also engage in "*blinding operations*" targeting Pakistani or Chinese satellites and ISR systems. In September 2009, Beijing and Islamabad signed a 222 million dollar deal for the promotion of satellite technology, which should enable Pakistan's space agency SUPARCO to launch three satellites in three years. As India's edge in space and missile technology over Pakistan becomes more apparent, one cannot discount the possibility that China will continue to pursue its time-old strategy of providing technological and military assistance to its South Asian ally, by assisting it further in its embryonic space programme, or by eventually supplying it with anti-ship ballistic missile technology in order to emasculate Indian carrier battle groups operating off the Arabian Sea. This would be a simple and cost-effective way for China to keep the Indian Navy's attention focused on its western, rather than on its eastern seaboard.

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<sup>14</sup> "Pakistan Navy test fires missiles in Arabian Sea manoeuvres," *The Hindu*, March 13, 2010.

Counter-space and missile defence risk would thus become two major priorities for both the Indian Navy and the Indian Air Force.

The Indian Navy will increasingly rely on Air Force counter-space operations in order to remain operationally relevant, and if the reported talks between Lockheed Martin and Indian authorities regarding a potential collaboration with the DRDO bear fruit, and result in the integration of the future Prithvi Air Defense Shield (PADS) with the AEGIS missile defence system, Indian destroyers equipped with such a system could find themselves assigned in the future to help shield Air Force fields from incoming missile barrages. IAF Phalcons could be tasked with guiding Indian Navy MiG-29Ks from the INS Vikramaditya, and providing them with Over-the-Horizon targeting data.<sup>15</sup> The AirSea Battle document reveals that the US Air Force is studying an *Air-Launched Hit-to-Kill* (ALHK) ballistic missile defence system that “*envision[s] a fighter aircraft-carried missile for both boost-phase and terminal-phase interception missions,*” the idea being that carrier-based aircraft could be employed as part of the ballistic missile defence system if they were equipped with such weapons. This is something that the DRDO could also look into.

As the global Revolution in Military Affairs, or RMA sweeps over the subcontinent, with war being sucked into its fourth and fifth dimensions, jointness between the Navy and the Air Force will become increasingly inevitable, and the US AirSea Battle Concept will find itself almost universally applicable wherever land and sea merge to form an extended battlefield. Efforts must be made as of now to encourage more joint IAF and IN exercises, as well as to promote greater synergy in terms of both procurement and information-sharing.

### Enhancing carrier groups' strike range

India's future carriers are slated to host MiG 29ks and Tejas LCAs, which are both short-range fighters, with a strike range of approximately 350 to 400 kms, and therefore face the same problems relating to operational relevance as their US alter egos when faced with long-range anti-ship cruise or ballistic missiles. The US Navy is attempting to remedy this shortcoming by developing a long-range stealthy carrier-borne UAV for strike and surveillance.<sup>16</sup> As India's own indigenous drone development picks up speed, the Indian Navy should focus on creating such a carrier-based UAV with greater tactical reach, or on purchasing the American-made U-CLASS system once it is completed, which should be around 2018. Similarly, when selecting the 40 new multi-role fighters destined to operate off India's second, larger indigenously built aircraft carrier, strike range should be granted

<sup>15</sup> Gulshan Luthra, Ranjit B. Rai, “IAF, Phalcons and Net Centricity,” *India Strategic*, March 2009.

<sup>16</sup> See *The Unmanned Combat Air System Carrier Demonstration Program: A New Dawn for Naval Aviation?* CBSA, officially released in May 2007, retrievable at <http://www.csbaonline.org/4Publications/PubLibrary/B.20070510.The Unmanned Comba/B.20070510.The Unmanned Comba.pdf>

a similar degree of importance as strike density.

### **The need for a more aggressive ASW strategy**

India's naval force structure is a carrier-centric one, which rests largely on blue-water power projection. With time, however, as both Pakistan and China's sub-surface inventories grow in size and capability, the Indian Navy will find itself compelled to adopt a more aggressive anti-submarine warfare stance, both in terms of strategy and procurement. Here as well, several lessons can be drawn from the AirSea Battle Concept. Just as the latter advocates exploiting the natural "chains" and "maritime passes" formed by the Ryukyu Islands and the Luzon Strait, the Indian Navy could form anti-submarine barriers along the Lakshadweep Islands in the Arabian Sea by deploying deep water ASW sensor networks, similar to the SOSUS system used for tracking Soviet submarines in the northern Atlantic Ocean during the Cold War.<sup>17</sup> An identical chain of sensors could be set up near the Andaman and Nicobar Command in order to keep an eye over any Chinese subsurface incursions along the eastern seaboard. While much of India's surface fleet would lie in wait behind the ASW barriers, and out of range of Pakistani and Chinese A2/AD systems, India's submarine flotilla would venture forward, deploying UUVs and mobile mines in a search and destroy mission for enemy submarines. Once the Indian Air Force had neutralized the A2/AD battle networks, an ASW task force formed of Project 28 ASW corvettes and maritime patrol aircraft would mop up any lingering subsurface threat, before the remainder of the surface fleet steamed forward for the kill.

The afore-mentioned combat scenario draws heavily from the AirSea Battle concept. In order for it to be fully effective, however, India will need more stealthy attack submarines, as they remain by far the most efficient and survivable platforms for ASW. Unfortunately, slothful procurement efforts, consistent delays in delivery and the forced retirement of antiquated vessels have all combined to engender an alarming state of affairs, which has led some to predict that by 2014-2015 India's rapidly fading sub-surface fleet will be formed of little more than five to six of its present fleet of 16 diesel-electric submarines,<sup>18</sup> along with one, or maybe two, operational ATVs, which may be SSNs or SSBNs, depending on the success in inducting the Sagarika SLBM. The Project 75 deal for six Scorpene submarines has already fallen prey to a three year delay, which means that the first French-designed boat is slated to roll out from the Mazagon Docks in 2015 rather than 2012. Every possible effort must be undertaken to fast-track the second line of six submarines planned for under Project-75 I.

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<sup>17</sup> On renewed American efforts in this field, see Richard Scott, "DARPA goes deep with ASW sensor network," *Jane's International Defence Review*, March 2010, p. 13.

<sup>18</sup> Rajat Pandit, "MOD to address sinking submarine fleet concerns today," *The Times of India*, January 8, 2010.

### Blinding and Learning to Fight Blind

Last but not least, the Indian armed forces must gear themselves up for the “scouting wars” and “ISR blinding campaigns” etched deep into the AirSea Battle concept. As India’s military apparatus modernizes, its infrastructure will stretch increasingly into both space and cyberspace. This will provide India’s navy and air force with incommensurable advantages on the battlefield as their interoperability acquires an unprecedented fluidity, but also presents the risk of succumbing to an over-reliance on network centrality, and hence of vulnerability.

Chinese military strategy has long viewed the US military’s technological edge as both its greatest strength and its deadliest weakness, which is why it emphasizes ASAT, cyber attacks and electromagnetic warfare as a means of re-establishing a certain combat symmetry. Acutely aware of this, the authors of AirSea Battle recommend that the US Navy and Air Force periodically conduct joint exercises in “no-space conditions”. The Indian military has fought solely in the “traditional” dimensions of warfare for so long that it will undoubtedly be some time before the danger of over-reliance looms its ugly head. Nevertheless, as India’s network centrality grows, so too will its need to rediscover how to “fight blind”.

New Delhi will also have to learn how to protect its cyber and space assets. India’s forays into the realm of space technology, after many years of only shuffling progress, have recently encountered a great degree of success, with the successful launch of the second ocean-monitoring satellite OCEANSAT 2 in September 2009, and of the much publicized lunar data collection mission in the course of the same year. By 2012, the Indian Navy hopes to have completed its first constellation of seven satellites, the Gagan (GPS Augmented Geo Augmented Navigation System) system.<sup>19</sup> This system, which will feed navigational and positioning information to both civilian and military platforms, and will be supplemented by a soon-to-be-launched geostationary satellite over the Indian Ocean, will be solely dedicated to military communications. As India’s satellite network grows, it risks becoming more vulnerable to ASAT. China has already shown that it is capable of neutralizing low-orbit satellites. As time goes by, its counter-space abilities will grow, and Pakistan may follow suit. In order to prevent Indian satellites from becoming “wasting assets”, it may be wiser to rely, as some US analysts have advised when discussing their country’s satellite architecture, less on a small number of large mainframe satellites, and more on a greater number of micro and nano satellites, in order to “spread out the

<sup>19</sup> Ranjit B. Rai, “Indian Navy eyes ‘Gagan’ to achieve network centrality,” *India Strategic*, March 2010.

<sup>20</sup> Gurmeet Kanwal, “Weaponisation of Space: Should India Join the Race?,” *India Strategic*, May 2010.

<sup>21</sup> John Markoff and David Barboza, “Researchers Trace Data Theft to Intruders in China,” *The New York Times*, April 5, 2010.

*damage*” in the event of an ASAT attack. A tri-service Aerospace command should also be set up in order to better coordinate the defence of India’s space assets,<sup>20</sup> and if the weaponization of space unfortunately becomes a foregone conclusion, to develop India’s own ASAT technology by investing in new technologies such as directed energy weapons (DEW).

Similarly, India may have to contend with a wave of cyber attacks in the event of a conflict with China or Pakistan. It was recently reported that a team of Canadian cyber security experts had traced several undetected infiltrations of Indian military websites and online databases to hackers operating in China.<sup>21</sup> This is most alarming, and reveals that India has yet to effectively address the cyber warfare threat. Some eminent Indian analysts such as Gurmeet Kanwal have recommended that a “nodal agency” be created in the form of a “Cyber Command (...) to spearhead India’s cyber war efforts under a national cyber security adviser who should report directly to the NSA.”<sup>22</sup> The creation of such an agency would be a means not only of protecting India’s cyberspace, but also of leaning on the nation’s considerable expertise in the field of software engineering to launch retaliatory cyber attacks.

## Conclusion

AirSea Battle, the latest brainchild of the Pentagon, may seem far removed from the Indian military’s preoccupations. After all, India has only just initiated its transition to network-centric warfare, and the conflict scenarios it faces in the Indian Ocean Region do not seem to bear much resemblance to those currently rippling through the WPTO. Nevertheless, Indian strategists may well find that many of the tactical quandaries faced today by the US carrier fleets cruising through the Asia Pacific are destined to become those of the Indian Navy in the not-too-distant future. Pakistan’s troubling mimicry of Chinese naval strategy, whether it be through its emphasis on A2/AD or on subsurface warfare, would indicate that it too will attempt in time to offset India’s growing conventional and technological edge by brandishing its own “*assassin’s mace*”. Hopefully, by then, India will have devised its own AirSea Battle concept, enabling it to parry the blow and reassert sea control.

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<sup>22</sup> See Gurmeet Kanwal, “China’s Emerging Cyber War Doctrine,” *Journal of Defence Studies*, July 2009, vol. 3, no. 3.