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LITTORAL AND ASYMMETRIC WARFARE

Warfare at sea is changing. In the past two decades navies have moved from strategies based on open-ocean fighting to strategies centred on littoral warfare. The term 'littoral' is defined as, 'the areas seaward of the coast which are susceptible to influence or support from the land and the areas inland from the coast which are susceptible to influence or support from the sea.'¹ The littoral, is thus, comprised of two segments: the seaward – covering the area from the open ocean to the shore – and the landward – covering the area inland from the shore that can be supported and defended directly from the sea. In contrast to the open ocean, the littoral battle zone is frequently characterised by confined and congested waters that, along with the supra-adjacent airspace, may be occupied by friends, adversaries and neutrals. The littoral includes international straits, such as the strategically important 'chokepoint' of South East Asia's, Malacca and Singapore Straits as well as the archipelagic straits and waters to Australia's north.

For Australia, the littoral zone has its own imperative. Our northern and eastern approaches are flanked by archipelagic nations which straddle our major trade routes. The Australian Exclusive Economic Zone is the largest such zone in the world, while our territorial claims extend into the Pacific, Indian and Southern Oceans.

The changed emphasis from a largely 'blue-water' to a littoral strategic orientation is understandable given that most of the areas of instability and conflict are centred on urban areas easily accessed by seaward approaches. In fact, 60% of the politically significant urban areas around the world are located within 25 miles of the coastline; 75% are located within 150 miles.

Littoral conflict is likely to arise where sovereign territory (as in South East Asia and the Caribbean Sea), mining rights, particularly in a contested region such as the South China Sea, where control of chokepoints is contested or where the right of transit for shipping is threatened (eg the Straits of Hormuz).

Navies have always had to deal with these types of conflict - littoral warfare is not a new concept. Rather, the term littoral warfare has come to emphasise a geographic location where fleet skills such as anti-air warfare, anti-submarine warfare, electronic warfare and amphibious warfare may be conducted to enable the execution of those missions required by the contemporary security environment.

Littoral operations encompass a variety of military activities, ranging from forward presence roles in peacetime to crisis response in conflict zones located near the coastline and extend to the insertion of expeditionary forces.

Within the current security context, littoral warfare may also entail such unwarlike missions as humanitarian aid and disaster relief as well as diplomatic and constabulary functions, including counter terrorism operations, political stability and nation building operations (as in the Solomon Islands) to-

gether with more customary peace-keeping tasks. Recent experience has underscored the premise that the most important role of naval forces in situations short of open war is to be engaged in forward areas, with the objectives of preventing conflicts and controlling crises.

One particularly significant aspect of littoral warfare is the combating of asymmetrical attacks targeted at coastal zones, military and naval units or commercial trade. Asymmetric strategies are sometimes referred to as 'fourth-generation' warfare. They are most commonly conducted in the littoral battle-space. Asymmetric techniques range from mine-warfare and specialised submarine operations to the adaptation of well-worn strategies of guerrilla-warfare at sea – such as the attack on the USS *Cole*, the attack on the French ULCC *Limburg*, and Sri Lanka's ongoing conflict with LTTE guerrillas.

Where the advantage should lie with the biggest or most technically advanced naval force, an adversary with less access to sophisticated technology, can indirectly challenge the superior force by using the geography associated with the littoral environment. Smaller craft in large numbers, carrying anything from AK-47s to rocket-propelled grenades or missiles or just packed with high-explosive charges, can be used to attack conventional naval or commercial shipping assets only to retreat to the relative safety of shallow waters, islets or rocky coastal hideaways.

Guerrilla warfare at sea includes the use of craft-borne, improvised explosive devices (IEDs) as well as floating and ground mines. Mines have been the most successful stealth weapon of the modern naval era. The potential threat of mines to the movement of naval units and to commercial sea-borne trade is one of the greatest challenges contained within the littoral battle-space. Mines can be made for a fraction of the cost of the targets they may potentially destroy and the mere threat of their existence justifies any expenditure on these weapons.



Figure 1. USS Freedom undertaking builder's trials on Lake Michigan, 28 July 2008. <http://www.daylife.com/photo/0235acv9Tj43Z>.

The growing use of naval units for crisis response and regional contingencies within the littoral zone has led to an increased need for smaller surface combatants. Shallow draft, very fast patrol boats incorporating water-jet propulsion, dedicated mine-



warfare ships, amphibious landing platforms, diesel-electric submarines and unmanned surface and sub-surface vehicles are appearing in the world's naval forces in increasing numbers. In addition, surface combatants designed for the littoral battle-space must be equipped with detection and tracking equipment necessary to provide proper target discrimination in a high clutter environment.

Littoral warfare also emphasises joint operability. This has become a key driving force in the determination of fleet structure. The RAN, for example, is committed to the acquisition of large amphibious platforms (C Canberra class LHDs) to eventually replace HMAS *Manoora* and HMAS *Kanimbla*. These vessels will have the capacity to transport up to 1,000 troops, 150 vehicles including M1A1 Abrams Main Battle Tanks, have six helicopter landing points on a full-length flight deck providing for a mix of both transport and battle-field support helicopters and a fully equipped hospital.

Versatility of role is another key requirement to meet the demands of littoral warfare. There is now a diverse range of littoral warfare platforms capable of performing a variety of tasks. A new USN ship, the *Freedom* (LCS-1) has been designed and built specifically to counter a number of littoral threats. Launched on 24 September 2006, at 125 metres long, and with a speed in excess of 40 knots, *Freedom* operates in less than five metres of water. This vessel can load and recover vehicles from ashore or be reconfigured for anti-submarine, mine or surface warfare.² The U.S. Marine Corps also plans to build around 55 vessels of a class based on the Tasmanian INCAT design, indicating a preference for practicality over traditional ship-hull design. Multi-hull designs are currently being assessed by the USMC; one of them a trimaran hull being built in Perth by Australian company Austal.³

Israel is commissioning its *Shaldag* Mk II water-jet patrol boats, which are already in service with the Sri Lankan Navy. Capable of speeds in excess of 43 knots and with a 53 tonne displacement, the *Shaldag* Mk II can turn at full speed within 100 metres, which suggests an on water policing and pursuit capability.⁴



Figure 2. The Shaldag Mk II water-jet patrol boat. <http://www.defense-update.com/directory/shaldag-II.htm>

Littoral conflict planning, which includes asymmetric threat response, has dual coastal defence and law enforcement aspects. A disadvantage common to all fleets is the difficulty of concealing naval combatants.⁵ An effective asymmetric weapon, the submarine, has sought to overcome this limitation. The development of the submarine is just one example of how the littoral environment has provided an impetus for the development of asymmetric weaponry. John Philip Holland originally conceived the submarine as an asymmetric response to the dominance of the Royal Navy. Holland designed a prototype submarine to enable the Irish Fenian Brotherhood to attack ships of the Royal Navy whilst they were in port con-

ditions. While his prototype submersible was not successful, it prompted official American interest and development finance followed.

In its military guise, the submarine offered an asymmetric capability as it enabled the weakest of naval powers to threaten the most powerful fleets.⁶ When the separately developed Whitehead self-propelled torpedo was combined with Holland's submarine in 1901, a formidable weapon was created. The sinking of the Royal Navy cruisers, the *Aboukir*, *Cressey* and *Hogue* revealed the vulnerability of conventional fleets to this form of attack and, thereafter, the mere threat of underwater attack determined naval strategy and tactics as well as fleet structures.

Today, diesel-electric submarines are considered ideal littoral warfare platforms due to their quiet operation, smaller size and versatility of role. They are capable of conducting stealth strikes against land or sea-based targets; they can insert special forces covertly; and they can conduct covert electronic surveillance.

Of interest, drug traffickers in the Caribbean Sea have also sought to take advantage of these features by improvising semi-submersibles to smuggle drugs.⁷ In response to this development, the Dutch Navy has reportedly deployed at least two diesel electric submarines in the Caribbean Sea to detect and monitor the activities of drug smugglers. The Dutch submarines can monitor the behaviour of smugglers for up to five weeks at a time.⁸

From an historical perspective, asymmetry of opposing forces is a natural adjunct to littoral warfare. The unorthodox system requirements of operating in relatively shallow and highly populated coastal environments suggests that smaller, high capability platforms with innovative weapon delivery systems supported by accurate intelligence will continue to dominate strategic planning in coming decades.

NOTES

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