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Sinking of the Cheonan: Rethinking Littoral Warfare

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The sinking of the Cheonan is a timely reminder on the complexities of littoral warfare. A serious rethink about asymmetric threats from the littoral zone is required for an adequate response.

THE RELEASE of the *Investigation Result on the Sinking of ROKS Cheonan* established beyond reasonable doubt that a CHT-02D acoustic/wake homing torpedo of North Korean manufacture was responsible for the sinking of the 1200 tonne Corvette. The multinational Joint Civilian-Military Investigation Group (JIG) assessed: “The evidence points overwhelmingly to the conclusion that the torpedo was fired by a North Korean submarine.”

The North Korean Navy’s (NKN) emphasis on the development of its littoral expertise resulted in the successful torpedo attack and sinking of the Cheonan, a Pohang class Anti-submarine Warfare (ASW) Corvette armed with fairly modern hull-mounted sonar, Mk-46 mod 2 light torpedoes and Mk-9 depth charge racks. The evidence suggests that the successful attack had been carried out by a NKN midget submarine – considered to be of an obsolete design by Western standards.

In short, it would seem that a low-tech enemy submarine and its subsequent torpedo launch went undetected by a fairly sophisticated ASW Corvette in familiar coastal shallows. The question that network-centric navies should be asking is -- have they thought and done enough about the threat posed by ultra-quiet diesel submarines that fight asymmetrically in littoral waters?

The Midget Asymmetric Threat

The North Korean submarine fleet comprises approximately 20 Romeo class submarines (1,800 tonnes), 40 Sango class midget submarines (300 tonnes) and 10 Yeono class midget submarines (130 tonnes). These low-tech diesel-electric submarines of 1950/60s vintage constitute the backbone of the asymmetric NKN – particularly the Sango and the Yeono class midget submarines. Rather than a

head-on beyond the horizon encounter with the technologically superior South Korean Navy, the NKN has built a special naval force around its midget submarines well-versed in the art of mine-laying, harbour infiltration and other forms of littoral warfare.

Such an asymmetric littoral-focused approach is not unique to North Korea. Iran too has a fleet of Ghadir and Nahang class midget submarines that might be more capable than the NKN's Sango and Yeono class. The missile and torpedo equipped midget submarines of the Iranian Navy have the potential to wreck significant damage on any expeditionary fleet operating in the crowded and noisy coastal confines of the Persian Gulf.

Compared to the vast open oceanic deep where under-sea detection is relatively easy, trying to detect a midget submarine in the sonically diverse environment of the littoral shallows can be akin to locating a Mozart-lover in the midst of a death-metal rock concert. In short, the littoral shallows, particular unfamiliar coastal waters constitute the most daunting environment for ASW operators.

Decline in Littoral Capabilities: A Cause for Concern

In 2005, an electric-diesel submarine, HMS Gotland was leased from the Royal Swedish Navy to evaluate the effectiveness of the US Navy's (USN) ASW capabilities. The Gotland was able to 'sink' the Nimitz class carrier USS Ronald Reagan in the open waters of the Pacific which in turn raised serious concerns about the USN's ASW capabilities. If US surface fleets are so vulnerable in the blue open of the Pacific, what then in the unknown murky brown confines of coastal waters.

In recognition of the undersea threat to its carrier strike groups, expeditionary strike groups and strategic sealift assets in forward operating areas, the USN has since poured in significant resources to the littoral environment including the development of the P-8 Poseidon Multi-mission Maritime Aircraft (MMA) as a replacement for the venerable P-3 Orion. Even so, no ASW systems, tactics and concepts of non Cold War origin have entered US service since the collapse of the Soviet Union – particularly any serious (re)conceptualisation of ASW in the littoral zone.

When the P-8 does enter service in 2013, its onboard magnetic anomaly and hydro-carbon detectors together with its ability to provide continuous maritime surveillance in conjunction with the Broad Area Maritime Surveillance (BAMS) UAV will represent a significant technological and capability leap from the 50 year old P-3. That in itself however does not mean that the USN or any of its partner navies will get any better in combating the asymmetric littoral threat. A rethink of what the littoral is and the willingness to see it as a unique system rather than an extension of what a blue-water navy does is long overdue.

Continued Relevance of the Littoral to the RSN

In its journey from First Generation to Third, the Republic of Singapore Navy (RSN) has built a well-balanced fleet with significant blue (open) and brown (coastal) water capabilities. In the contemporary maritime security environment, the greater challenges for the RSN will lie in the littorals – particularly asymmetric threats to ship-to-shore operations. As such, the RSN would do well to maintain and further develop its Mine Countermeasures (MCM), Protection of Installation (POI), coastal surveillance and intelligence, Command and Control (C2) of joint operations in the littoral and ASW capabilities.

Despite a life extension programme, the RSN will have to consider replacing its twenty year-old Victory class Missile Corvettes within the decade. Rather than dedicated surface combatants, a possible replacement could be multi-mission command and support ships such as the Absalon class of the Royal Danish Navy (RDN). Through the use of mission modules, such ships have the flexibility of serving as C2 platforms, MCM vessels, amphibious assault ships and hospital ships in littoral zones.

In the maritime security environment of the 21st century, the US and its strategic partners will find

themselves increasingly crossing the blue only to get to the littoral. The sinking of the Cheonan by a 1950-era midget submarine in familiar coastal shallows should have by now roused the carrier-barons from their clear blue slumber. Midget submarines and littoral combat are not sexy buzzwords of the month – they are deadly reflections of a new strategic reality.

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