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By Swee Lean Collin Koh

The littoral combat ship USS *Coronado*, upon recent completion of its 14-month Indo-Asia-Pacific stint, marks the conclusion of the U.S. Navy's third LCS rotational deployment to the region. Thus far, the LCS has not operated without problems, including criticisms about its lack of a potent offensive strike capability.

Designed in two separate variants - the monohulled *Freedom*, and the trimaran-hulled *Independence* classes - the LCS forms part of broader plans to forward-deploy the bulk of the U.S. Navy to the region. Following the retirement of the *Oliver Hazard Perry*-class guided missile frigates which used to be the U.S. Navy's general-purpose workhorse, the LCS represents an alternative platform spanning between a huge, heavily-armed Aegis surface combatant and a small, under-armed *Cyclone*-class coastal patrol craft which had once engaged the Southeast Asian brownwater navies. The LCS also banks on its modular mission concept, enjoying up to 60-percent of reconfigurable below-decks internal space compared to less than 10-percent on board the Aegis surface combatants.

Of especially significant value is the LCS's shallow draft, less than four meters compared to over 10 meters of the Aegis destroyer or cruiser, allowing entry into areas that other ships could not in the Indo-Asia-Pacific littorals characterized by archipelagos, congested sea lanes, shallow water, and small ports. "In that arc between the Philippines and Sri Lanka, nearly 50 ports are accessible to larger ships," Rear Admiral Don Gabrielson, Commander, Task Force 73 [described](#) in January 2017 but the LCS, he pointed out, "can dock in

well over a thousand ports in the same range of locations.”

Trial and Error: Early LCS Deployments

The LCS has come a long way since the first vessel, the USS *Freedom* (LCS-1), debuted in the type’s maiden rotational deployment. But this ship was unfortunately bogged down by systems breakdown, which was [attributed](#) to it being “a research and development platform,” even though the ship remained available for 70 percent of the time – on par with most other forward-deployed vessels. Despite its problems, the LCS even managed to render humanitarian assistance and disaster relief to the Philippines in the aftermath of Super Typhoon Haiyan in November 2013. The U.S. Navy and Lockheed Martin have since made design changes in follow-on *Freedom*-class ships, such as improved diesel-electric generators, main reduction gear coolers, and other software modifications.

Following the *Freedom*, her sister ship of the same class, USS *Fort Worth* (LCS-3), became the second LCS to be rotated through Southeast Asia. It was also the first LCS to deploy for 16 months under a “3-2-1” manning concept, that is, having three rotational crews to support two LCS and one ship deployed at any time. This envisages fully-trained crews to be swapped roughly every four months, thus allowing it to deploy six months longer than the *Freedom* which swapped crews only once every 10 months, thus extending LCS forward presence and reducing crew fatigue. The *Fort Worth* deployment served as a U.S. Navy test-bed for how the LCS can be employed for sustained periods taking into consideration that the small crew size, rotational crew concept, contractor-reliant maintenance structure, and swappable combat systems modules are all relatively unique compared to the rest of the fleet.

Crewing remained a challenge, considering that the *Fort Worth* was manned by around 100 sailors, compared to 180 on board the *Perry*-class frigates. Then in January 2016, a [machinery problem](#) sullied the LCS' otherwise noteworthy performance, resulting in the ship being side-lined for extended periods. After a prolonged period of rectification work, the *Fort Worth* managed to join the Rim of the Pacific (RIMPAC) exercise in July. Overall, the *Fort Worth* fared reasonably well - underway for 185 out of 298 days for its entire deployment - [totaling over 18 months](#) with the 7th Fleet. It managed to complete numerous bilateral and multilateral engagements, and assisted in the search-and-rescue operations for AirAsia flight QZ8501 in late 2014.

New Milestones with the USS *Coronado*

The USS *Coronado* (LCS-4) [arrived in the 7th Fleet area of responsibility](#) in early October 2016 - becoming the first *Independence* variant to deploy to Southeast Asia. Compared to the *Freedom* variants, the *Coronado* possesses more fuel capacity thereby providing increased operational capabilities. It is also equipped with the Surface Warfare mission package, comprising two 11-meter rigid-hulled inflatable boats, two teams for visit, board, search and seizure operations, and two 30mm chain guns. Most significantly, this variant boasts a bigger flight deck allowing for expanded aviation operations including two MQ-8B Fire Scout unmanned aerial systems (UAS), and for the first time on board an LCS to Southeast Asia, an MH-60S Seahawk helicopter.

In response to criticisms about the LCS' lack of long-range offensive strike capabilities, the *Coronado* was outfitted with four RGM-84 Harpoon Block-1C anti-ship cruise missiles. This is roughly equivalent to the four YJ-83 missiles typically fitted on board the Chinese Type 056 *Jiangdao* corvette. The Harpoon is a venerable but aging design despite numerous upgrades. Until new ASCMs

such as the Long Range Anti-Ship Missile (LRASM) arrive, the LCS will have to make do with the Harpoon. This armament, hitherto not seen in the *Freedom* and *Fort Worth* deployments, represents a step, albeit an interim one, toward bolstering the LCS' combat capabilities.

The *Coronado* became a test-bed for surface strike concepts integrating both the newfound missile capability and its organic aviation capacity. The LCS [captured](#) the first inverse synthetic aperture radar pictures of surrounding surface contacts with the Fire Scout, marking a critical step toward providing a recognized maritime picture for the LCS, and for over-the-horizon (OTH) Harpoon missile targeting. The [first OTH test-fire](#) failed to hit its target in July 2016 during RIMPAC, but following rectification work, in August the following year the *Coronado* [successfully fired](#) a live Harpoon ASCM off Guam in OTH mode using both Fire Scout and MH-60S to provide targeting support.



PHILIPPINE SEA (Aug. 22, 2017) A Harpoon missile launches from the missile deck of the littoral combat ship USS Coronado (LCS 4) off the coast of Guam. (U.S. Navy photo by Mass Communication Specialist 2nd Class Kaleb R. Staples/Released)

Compared to the previous LCS deployments, the *Coronado* also attained several new breakthroughs for the LCS Program. Amongst various skillsets including small-boat defense, the *Coronado* demonstrated a first for the LCS in integrating special operations forces during RIMPAC 2016. Moreover, the ship was [able to complete](#) in just seven days extensive “D” Phase maintenance, the most intrusive period of organizational-level maintenance which normally takes as long as 2.5 weeks for the MH-60S helicopter while deployed – another achievement.

The *Coronado* also advanced the 15-4 maintenance concept of shaving the average repair time for maintenance casualties while deployed from 15 to just four days, thus increasing ship availability and readiness, according to Lieutenant Commander Arlo Abrahamson, spokesman for the U.S. Navy's Task Force 73. Furthermore, in June 2017, the LCS [conducted an expeditionary preventive maintenance availability](#) in Cam Ranh International Port, Vietnam – marking the first demonstration of such capabilities for the *Independence* variant to be conducted outside the normal maintenance hub in Singapore – and a similar feat was accomplished in Lumut, Malaysia.

Adding Value to Southeast Asian Maritime Security

Southeast Asian maritime forces may have invested in larger surface combatants such as frigates, but they continue to operate numerous coastal and patrol combatants which mainly operate well within the shallow 12-nautical mile territorial sea limits. With its shallow draft, the LCS gains more opportunities to engage these often obscure Southeast Asian “brownwater” counterparts, availing the crew to the latter's diverse range of useful experiences and intimate familiarity with the local littoral operating environment. “The LCS is a comparable sized platform to ships of navies across South and Southeast Asia, which provides an opportunity to conduct a variety of operations and missions with partner nations... and our LCS sailors learn just as much from operating with the partner navies of the region – so the learning goes both ways,” Gabrielson [wrote](#).

Such engagements would not have been possible if Southeast Asian brownwater naval elements are unable to venture beyond those littoral confines to train with the U.S. Navy's large surface combatants. This is also a matter of managing perceptions – a gigantic Aegis destroyer might not make

good contrasting optics with the puny Southeast Asian vessels; it could appear too overpowering yet at the same time, excessive for the limited nature and scope of engagements with these much simpler and capability-constrained counterparts.

In all, throughout the entire 14-month deployment to Southeast Asia, the *Coronado* continued and built on the work done by its predecessors. In its 15 port visits across the Indo-Asia-Pacific, the *Coronado* called on Cam Ranh and Lumut in July and September 2017 respectively - the first for the LCS. In the Sulu Sea, where kidnap-for-ransom attacks by militants were reported, it conducted coordinated counter-piracy operations with the Philippine Navy. The *Coronado* implemented ship-rider programs by embarking regional naval officers on board the vessel. It also rehearsed the Code on Unplanned Encounters at Sea (CUES) procedures during Naval Engagement Activity Vietnam - another continuation from its predecessors, such as the *Fort Worth* which practised the mechanism with Chinese warships during its [May 2015 South China Sea routine patrol](#).

Notably, however, the *Coronado* adds to Southeast Asian maritime security capacity-building - leveraging upon its capabilities hitherto not found on board its predecessors to enhance interoperability especially in conventional warfighting. Building on the Cooperation Afloat and Readiness Training (CARAT) exercises in August 2015, when several Southeast Asian navies conducted deck landing practice with their helicopters on board the *Fort Worth* for the [first time](#), the *Coronado's* UAS capability brought new value to the interoperability training - in particular OTH targeting.

This capability is especially relevant given the interest lately evinced in Southeast Asia in shipboard UAS capabilities, which constitute a cost-effective

force multiplier for budget-conscious regional navies, such as Singapore which retrofitted the ScanEagle UAS on board the modernized *Victory*-class missile corvettes. In this context, UAS-enabled OTH missile targeting constitutes one of the key focus areas of contemporary Southeast Asian naval warfighting capacity-building. The Republic Singapore Navy refined OTH targeting of Harpoon ASCMs during the [inaugural bilateral Exercise Pacific Griffin](#) off Guam in September 2017, and the *Coronado* participated in the effort.

The significant utility of LCS rotational deployments to the region mean that plans are afoot to ramp up the ship's presence. In February 2015, the U.S. Navy [announced plans](#) to operate four LCS out of Singapore - one at a time - by 2018. The LCS was viewed as "a pillar of future U.S. maritime presence in Southeast Asia," Abrahamson remarked, adding, "We expect the next LCS to deploy to Southeast Asia in mid-2018 with multiple LCS operating from the region in the near future."

Inherent Limitations

But given the need to balance between fulfilling an ever-growing list of operational demands in the Indo-Asia-Pacific and enhancing operational safety, especially in the wake of the recent ship collisions, capacity constraints may pose potential challenges. Despite extensive automation on board the LCS which meant less sailors required for daily tasks, thereby allowing a rotational crew concept and keeping ships deployed longer than other platforms, a smaller crew also has less time for maintenance. This was addressed by the U.S. Navy's implementation of a contractor-reliant LCS maintenance structure. During its deployment, the *Fort Worth* docked in Singapore once every few weeks to be serviced by the maintenance personnel. To boost LCS availability, the Navy also purchased an expeditionary maintenance capability, which

consists of two large shipping containers – one acting as a workstation and the other containing spare parts for the LCS, which can be shipped to most ports worldwide.

However, the small crew size on board the LCS still poses the issue of getting sufficiently qualified crews to man the LCS, in order to keep up with the high operational tempo that characterizes forward deployments to the Indo-Asia-Pacific. For instance, the delay in getting a new crew qualified to replace them after a change in training standards led to the [open-ended deployment of the Coronado's Crew 204](#). Crew 203, which was supposed to replace Crew 204, required a ship to get underway to qualify under the new standards.

Unfortunately at that time, all available *Independence* ships were either in overhaul or undergoing repairs – an unintended consequence of a complete reorganization of the LCS Program's manning system triggered by the earlier spate of LCS engineering woes, such as the breakdowns which afflicted the *Freedom* and *Fort Worth*.

Considering that demands for security cooperation missions which typically characterize engagements with Southeast Asian maritime forces will probably increase, and given that the LCS is also required for crew qualifications besides rotational deployments, fleet availability would hinge heavily on the U.S. Navy's overall scheme for small surface combatants (SSCs) that are tailored for such low-end tasks.

The current LCS Program envisages a total of 40 ships though the U.S. Navy has maintained a requirement for at least 52 to conduct security cooperation exercises with allies and the low-end missions the ship was originally designed for. A total of 29 LCS had been procured through FY2017 and for FY2018, the Navy would procure the 30th and 31st ships. The December 2015 program

restructuring saw the reduction of planned annual procurement rate from about three ships to just one or two. As part of its FY2018 budget submission, the Navy [decided](#) to shift from procuring LCS to the FFG(X) separately from the LCS Program, starting in FY2020. But the FFG(X) design may or may not be based on one of the existing two LCS designs. This generates uncertainty overall for the SSC scheme.

Conclusion

That said, notwithstanding problems faced by the LCS throughout the three iterations of its rotational deployment, the presence of this type of warship not only fulfilled its intended missions but also opened new vistas for engagement with Indo-Asia-Pacific littoral navies, especially in helping build Southeast Asian maritime security capacity. As pertinently, in such times of troubled peace given the persistent maritime flashpoints and ensuing angst amongst many of the regional governments, the LCS does symbolize Washington's deepening security commitment to the Indo-Asia-Pacific.

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Featured Image: The USS Coronado at Changi Naval Base in Singapore on Oct. 16. (Photographer: Roslan Rahman/AFP via Getty Images)

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