ANZAC UPGRADE PROGRAM POWERING ALONG

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While the woes of the Air Warfare Destroyer continue in Adelaide, 2000km in Fremantle the ambitious ANZAC Frigate Anti-Ship Missile Defence (ASMD) upgrade program is meeting all of its milestones. We have previously detailed the impressive performance of the ship’s active digital phased array radars supplied by Canberra company CEA – matched with Saab’s 9LV combat management system – that provide world leading defensive capability. However, just as impressive is the work being done to replace outdated hardware, upgrade the operations room and install the new radars and their distinctive mast – amongst other tasks.

This work is being performed by BAE Systems at their Henderson facility, in which the company has invested $30 million to create an impressive modern shipyard. The company is progressively upgrading eight frigates to their full ASMD configuration – which also includes the VAMPIR Infra Red Search and Track system from Sagem – and has completed the first two in the series. HMAS Perth was first out of yard in February 2011 but that work was completed under a separate contract. There was then a delay of almost two years before the upgrade alliance partners – CEA, Saab and BAE Systems – secured the ANZAC ASMD Follow On (FON) contract for the remaining seven frigates.

Of these, HMAS ARUNTA has been completed and ship 3 in the series HMAS ANZAC is due to complete sea trials shortly before departing for Gallipoli to mark the centenary of the landings next April. Ship 4 HMAS Warramunga and Ship 5 HMAS Ballarat are currently on hard stands at Henderson, with upgrade work taking place at a furious pace. The remainder of the series comprises Ship 6 HMAS Parramatta; Ship 7 HMAS Toowoomba; and Ship 8 HMAS Stuart. Work is scheduled to finish in 2017.

One has to visit the yard to truly understand the scale and pace of the work that is underway – a total of 250 workers are swarming over the ships and are busy in nearby fabricate sheds, with welders, angle grinders and heavy machinery providing a noisy accompaniment. The extent of the ASMD upgrade is massive and effects every compartment of the ship. The tasks involve 8 major separate Engineering Changes (e.g. Upgrade Operations room, Combat Management System, Radar Systems, Quarterdeck Enclosure, Solid Ballast). The new radars can be adequately powered by the ship’s electrical system, however additional cooling water is required. A lot of maintenance work is also being carried out with the ships in a state of partial dismemberment – for example each 5” main gun is removed and sent to Melbourne for comprehensive refurbishment.

In summary, the upgrade involves:
- More than 600,000 man hours of work per ship
- 28,000 metres of cable installed
- 4,000m2 of steel and alloy sheet installed
- 375 km of welding wire used
- 12,463 lead ingots (9.1 ton) installed
- 28 tonnes of old paint removed and 14,000lt of new paint applied
- 30 + local subcontractors and various interstate and international subcontractors

However, when completed this is far from the end of work to be carried out on the ANZAC Class, which will remain in service until 2030 when they start to retire. To reach this date and to have a reasonable risk buffer a number of additional upgrades and modifications must occur. Two of these tasks are identified in the Defence Capability Plan (DCP) are SEA 1442 Phase 4 – somewhat controversially awarded to new entrant in the Australian naval communications market, Selex for $188 million; and SEA 1448 Phase 4B, which will replace the search radar.

In addition, $500 million has been set aside for the block upgrade of the class, which is scheduled to begin in 2018. This will include the two DCP projects mentioned above as well as a great deal of further mechanical remediation work to deal with matters of obsolescence. In this regard the Royal New Zealand Navy is ahead of Australia and has already undertaken a large upgrade, which saw the MAN diesel engines replaced with more powerful versions and a host of other changes to gearboxes and air conditioning systems – something the RAN has been closely watching. The company most extensively involved in this task was Babcock, which along with partner company UGL, is also undertaking maintenance work on the Australian ships and has partnered with BAE Systems for the forthcoming block upgrade.

But even though BAE Systems now has enormous relevant experience in pulling apart and reassembling ANZAC frigates – precisely the skillset needed for the block upgrade – and has now partnered with companies that have preformed similar work in New Zealand, there are no uncertainties in Australian defence contracting. Furthermore, everyone can be reasonably certain that the Henderson yard is very efficient because it is also winning commercial orders for the intensely competitive offshore oil and gas sector. During our visit we noticed a tug on a hardstand being cleaned and a huge barge moored nearby for maintenance work, with its associated mooring pylons having been designed, tested and sunk into the seabed in six weeks.

In a logical world and in a country with an actual defence industry policy, BAE Systems and their partners would complete the ANZAC ASMD upgrade in 2017 and then smoothly transition – using precisely the same skilled and experienced workforce - into the block upgrade program in 2018. To the RAN people on the ground such an outcome is highly desirable because they witnessed what happened during the two year hiatus between finishing work on HMAS Perth and the start of work on HMAS ARUNTA – namely that BAE Systems lost most of their skilled people to the rapacious mining industry because they did not have enough work to tide them over between defence contracts.

As is the case with so many naval projects, it is vital that there be a continuity of work and this needs to flow in a timely manner so as to avoid debilitating and expensive peaks and troughs in activity. Let us hope that message can be transmitted from the Henderson yard to the Canberra bureaucracy.

(The author travelled to Henderson as a guest of BAE Systems)