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Babcock and UGL strike up a new JV

Babcock Pty Ltd and UGL Infrastructure Pty Ltd have formed **Naval Ship Management (Australia) Pty Ltd (NSM(Aust)),** an incorporated joint venture, to provide naval surface ship repair and maintenance services for the ANZAC Ship Group Maintenance Contract (GMC).

NSM(Aust) has been announced as the preferred tenderer for the ANZAC Ship GMC. This new $300 million five-year contract, with potential extensions based on performance, is expected to provide better outcomes for industry and more effective, value for money outcomes for the Navy. Contract negotiations are expected to be finalised by June 2012.

Babcock and UGL were also among those selected last year by the Department of Defence to tender for the Amphibious and Afloat Support Ships GMC when released.

AWD and LHD update

Defence Minister Stephen Smith and **Defence Materiel Minister Jason Clare** announced on March 9 the following allocation of block construction work for the third ship of the $8 billion Air Warfare Destroyer (AWD) Project.

- Forgacs (Newcastle) – 15 blocks;
- ASC (Adelaide) – eight blocks;
- Navantia (Spain) – five blocks; and
- BAE Systems (Melbourne) – two blocks.

This means the four shipyards will construct the same blocks for ship three that they are constructing for ship two. The construction arrangements for block structure and block pre-outfit are:

- Ship 1: BAE Systems 7, Forgacs 14, ASC 9
- Ship 2: BAE Systems 2, Forgacs 15, ASC 8, Navantia 5
- Ship 3: BAE Systems 2, Forgacs 15, ASC 8, Navantia 5

Getting the same shipyards to build the same blocks for ships two and three will enable the AWD Project to take advantage of lessons the shipyards have learnt and the experience they have gained from building the same blocks.

The AWD project involves the construction of 90 separate steel blocks being built at four shipyards in Adelaide (ASC), Melbourne (BAE Systems), Newcastle (Forgacs) and Spain (Navantia) as well as the three sonar block assemblies being built in Spain and the United Kingdom.

In May last year the Government announced the reallocation of 18 blocks for AWD Ships one and two. Thirteen blocks were divided between Forgacs, ASC and BAE with five allocated to Navantia. The reallocation of work for ship three means that overall division of block construction across the project is:

- Forgacs – 44 blocks;
- ASC – 25 blocks;

- BAE Systems – 11 blocks; and
- Navantia – 10 blocks.

AWD Alliance CEO Rod Equid said the Navy's ship build programs, the AWD and Landing Helicopter Dock (LHD), are laying the foundation for a sustainable naval shipbuilding sector in Australia. The programs are building on existing national capability to establish a world-class naval shipbuilding and systems integration capability.

"More than 2,200 people are now working directly on the project, including 900 people at ASC in Adelaide, 450 at Forgacs in Newcastle, 520 at BAE Systems in Williamstown working on AWD and LHD, and 550 in Adelaide and Sydney working across the program," Equid said.

"Consolidation of the first ship, *HMAS Hobart*, will be underway later this year marked by the first keel-laying ceremony in Adelaide. Work will continue this year on Ship 2, *HMAS Brisbane*, along with the start of block construction of Ship 3, HMAS Sydney."

"Raytheon Australia's testing of the Hobart Class combat systems for the three ships is progressing well. Procurement for each element of the combat system is proceeding ahead of the project schedule."

NZAF welcomes arrival of first NH90 helicopter

The **New Zealand Defence Minister Jonathan Coleman**, officially welcomed the first of the Air Force's new medium utility NH90 helicopters at an event in Wellington.

"The NH90 helicopters will be the most advanced and capable helicopter the Air Force has ever had," said Coleman.

"The NH90s will considerably improve the Defence Force's ability to conduct military, counter-terrorism, disaster relief, search and rescue, and other operations," he said.

"This milestone illustrates that we are delivering on the plan laid out in the Defence White Paper. Like other defence forces around the world we are reprioritising our resources to provide up-to-date capability for a 21st century Defence Force. The NH90 is an outstanding example of the modernisation process so far," said Coleman.

In total eight NH90s have been purchased for operations, with a ninth to be used for parts. The first two of these new helicopters is now ready for training purposes within New Zealand. The new helicopters can carry up to 18 passengers. They can lift an army Light Operational Vehicle (LOV), or up to 3,200kgs of cargo. The NH90s have twin engines for better safety over water.

The NH90s will eventually replace the fleet of 12 Iroquois, which have been in use for more than 40 years.

"We are delighted to have the NH90 helicopters as part of our new fleet. They are an important part of the Defence Force of the future," said Coleman.

The NH90 will be used for frontline military and civil operations. It has the capability to support ground operations, counter terrorism, disaster relief, search and rescue and counter-drug operations. It will be available to support other Government agencies, for example, Police, Customs, Maritime NZ, Civil Defence, and the Department of Conservation will all be able to make effective use of the NH90.

Global Hawk termination to increase BAMS costs?

Inside Defense reports that the US Air Force decision to forgo signing a contract for three Global Hawk Block 30 aircraft will impact the Navy's Broad Area Maritime Surveillance unmanned aircraft buy by upwards of US$150 million and likely have a spillover affect on NATO's Alliance Ground Surveillance program.

Last week under the heading *We too for U2?* we pondered in this newsletter the possibility of the ADF prevailing on its US allies to provide U-2 overflights in our regions of interest, providing us with imagery and other intelligence at cost.

Leasing U-2 aircraft in sufficient numbers to perform maritime patrol missions ourselves was also suggested.

Our view was simply put forward as an interim solution to fill the potential five year gap between the retirement of the AP-3C Orions, and their partial replacement by P-8A Poseidon aircraft and the eventual introduction of around seven unmanned high altitude long endurance (HALE) maritime surveillance systems.

As we know this country had previously shown interest in the US Navy's Broad Area Maritime Surveillance (BAMS) solution which eventually focussed on the MQ-4C BAMS UAS, a derivative of the USAF's Global Hawk Block 30 variant, and for which trials begin this year.

However Australia's decision to quit its involvement in the USN's BAMS program, due to funding and other priorities, has not terminated AIR 7000 Phase 1B concerned with the acquisition of an unmanned maritime surveillance system. And while the US Navy's MQ-4C is an obvious contender, another is the General Atomics Mariner, based on the highly successful Predator series of unmanned system.

The point we wished to make was that if we are going to have to hang about for a few years, while everyone draws a breath after the introduction of the Poseidons, before deciding what unmanned system is needed, in the meantime why not co-utilise whatever our USAF/PACOM friends are employing for high altitude surveillance.

Tests begin on C-130H engine upgrades

Rolls-Royce and the **US Air Force** will soon begin flight tests of an engine upgrade for the T56 turboprop engine, which powers the C-130H transport aircraft. The Series 3.5 upgrade is designed to deliver both fuel savings and reliability improvements, as well as improved Life Cycle Costs.

Rolls-Royce has delivered upgrade kits to be installed on an Air Force C-130H test aircraft, with flight tests scheduled to begin by mid-year. The enhancements use proven technologies from other Rolls-Royce commercial and military engines, including new blade materials and advanced turbine airfoil aerodynamic designs.

The engine upgrade program is expected to deliver significant benefits to the Air Force's C-130H fleet, enabling the aircraft to continue operation until 2040 while delivering fuel savings of eight per cent; along with improved reliability and performance. The Series 3.5 enhancement will also improve "hot and high" performance. Approximately 220 C-130H aircraft are eligible for upgrades.

USAF/PACOM to increase aircraft rotations in Australia

The **US Air Force, US Pacific Command and the Royal Australian Air Force** are working on a training and exercise program to strengthen relationships between the organisations, a sign of the United States' increasing presence in the Pacific and one linked to the rotational deployments of US Marines to Australia.

In November, **President Obama** announced the Marine Corps would establish a semi-permanent presence in Darwin by deploying about 250 Marines at a time to take part in joint training missions. That agreement between the Australian and American governments also calls for closer cooperation between the USAF and its Australian counterpart.

According to **Captain David Herndon**, a Pacific Air Forces spokesman based at Hickam Air Force Base, HI, the Marine Corps' presence in Australia will bring with it increased rotations of American aircraft through the north of the country. The details of those rotations are still being worked out, but will eventually provide a forum for enhanced bilateral collaboration, he wrote in a March 6 email.

"The exact types of aircraft that will fly in and out of northern Australia will depend upon the enhanced training and exercise portfolio crafted by US Pacific Command [PACOM] in cooperation with the Australian Defence Force," he said.

Herndon added that the ability to train and exercise more closely with the Royal Australian Air Force could be beneficial in military operations, humanitarian crises and in an effort to promote "security cooperation across the region."

Admiral Robert Willard, the commander of PACOM, testified before the House Armed Services Committee recently, when he spoke favorably about the prospect of having an American rotational force in northern Australia. He stressed that international allies have no appetite for establishing permanent American bases on their territory, and so temporary deployments or the sharing of installations in the region could be an effective way to enhance operations in the Asia-Pacific. — *Gabe Starosta, Inside the Air Force*

F-35 flight training begins

While the maiden training flight of the **F-35 Joint Strike Fighter** was aborted last week following an 'in-flight emergency', the aircraft was cleared for takeoff after months of high-level internal Defense Department debate over whether it was safe to begin training, according to sources and documents.

Those deliberations gave rise to a remedial plan that eventually won unanimous support from senior officials including DOD's top weapons tester, who last fall raised safety-related concerns about F-35 training flights.

According to previously unreported internal DOD memos, the Air Force, the F-35 joint program office and the director of operational test and evaluation collectively worked out an 11-step plan to resolve safety issues and to build consensus about when to initiate flight training.

The Air Force and the program office last Autumn were pushing to begin training in November 2011; **Michael Gilmore**, the top weapons tester, said in October that at least 10 additional months were needed. The compromise plan to begin F-35 flight training this month eventually secured **Defense Secretary Leon Panetta's** support.

Dragon and Defender take to the sea for trials

Two of Britain's **Daring Class destroyers** have taken to the sea to further test their capabilities before initial deployments. *HMS Dragon* left a trail of smoke and fire off Portland as she tested her decoy flares for the first time during her intensive trials and training package. Meanwhile Britain's fifth Type 45 destroyer has sailed for four weeks at sea off the west coast of Scotland to complete her trials. *HMS Defender* is testing her engines, communications and combat systems ahead of being handed over to the Royal Navy this summer.

Upon her return to Scotstoun next month, *Defender* will undergo three months of final testing and checking her systems before she leaves the Clyde and sails to her home for the next 30-plus years, Portsmouth, in July to join the bulk of the Type 45 fleet.

As for Defender's five sisters, *Daring* is deployed, *Dauntless* and *Diamond* will do so later this year, and *Dragon* is undergoing training and trials ahead of her maiden deployment. The final ship in the six-strong class, *HMS Duncan*, is in the latter stages of

completion at Scotstoun and will head to sea for the first time towards the end of the year. She's due to be handed over to the Royal Navy before the end of 2013, bringing the curtain down on a decade's construction on the Type 45 project.

Trials start with first shot from EM railgun

Engineers at the **US Naval Surface Warfare Center in Dahlgren**, successfully fired the first shot from the **Electromagnetic (EM) Railgun prototype launcher,** developed by **BAE Systems.** The test shot kicks off a two-month-long series of tests to evaluate the first industry-developed EM Railgun that will help bring the US Navy a significant step closer to producing a next-generation, long-range weapon for surface ships.

"This is the first-ever shot from the world's first tactical Railgun. Unlike the laboratory launcher, this Railgun has the look and design of a gun that could potentially fit on-board a surface ship," said **Dr. Amir Chaboki,** BAE Systems' Program Manager for Advanced Systems.

"This accomplishment is a result of great collaboration between BAE Systems and our industry partner, IAP Research, engineers, scientists and our government counterparts."

These tests will complete the first phase of a two-phase program to essentially invent an entirely new gun that will change the Navy forever. The second phase will focus on further developing the technology at a significant firing rate of 10 rounds per minute while implementing cooling and thermal management.

The EM Railgun technology uses high-power electromagnetic energy instead of explosive chemical propellants to propel a projectile farther and faster than any gun before it. When fully weaponized, the EM Railgun will deliver hypervelocity projectiles in support of Marines, ground forces and ship defense.

At full capability, the EM Railgun, mounted on USN vessels, will be able to fire a projectile at 32-megajoules (MJ) approximately 110 nautical miles. The high-velocity projectile will destroy land, sea, and air targets using kinetic energy, rather than with conventional explosives.

Cooling down hostiles with RF heat

A new millimeter-wave system developed by the **Joint Non-lethal Weapons Directorate** gives warfighters something more persuasive than shouting but less harmful than shooting when dealing with potentially hostile crowds, Defense Department experts said during a recent demonstration.

At a training area on Marine Corps Base Quantico in northern Virginia, members of the media gathered to watch two prototype active-denial systems — one built onto a heavy expanded-mobility tactical truck, the other onto a Humvee — deliver a man-sized heat beam to officials and experts, then to service members pretending to be angry protestors, then to fearless volunteers.

The beam, from the same millimeter-wave technology used in airport body scanners, penetrates only 1/64th of an inch into a person's skin and cornea, heating water molecules in the tissue and generating an instinctive and irresistible urge to run from the effect.

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