



# DEFENCE WEEK

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## More Spanish designs for RAN?

When it was announced that the Spanish Armada Ship SPS *Cantabria* was to be deployed to Australia for most of next year it wasn't immediately obvious that the purpose was not only to provide a fleet replenishment capability lost while *HMAS Success* is under maintenance but also to thoroughly evaluate the ship as a possible contender for the RAN's next fleet support capability.

Under a project arrangement drawn up with Spanish naval authorities in July and signed just last week, by VADM **Ray Griggs** Chief of Navy, the *Cantabria* will operate in Australian waters from February to November 2013, providing replenishment support to the RAN fleet while the oiler *HMAS Success* undergoes maintenance. Happily the deployment will also allow Australian personnel to train on systems similar to those in the Spanish-designed Hobart- and Canberra-class ships being acquired, and allow the Royal Australian Navy to evaluate the design as a possible replacement for its two replenishment vessels, HMA Ships *Success* and *Sirius*.

The *Cantabria* is a modern auxiliary oil replenishment ship, similar to *HMAS Success*, which is capable of supplying fuel, food, stores and ammunition to ships underway. This will be the longest deployment undertaken by *Cantabria* and will allow the Spanish Armada to trial the ship's full range of capabilities including the operating/maintenance cycle of the ship's systems, and the logistics and maintenance support mechanisms for the ship.

Many of *Cantabria's* ship systems are similar to the new Spanish designed Canberra Class Landing Helicopter Dock (LHD) ships and the Hobart Class Air Warfare Destroyers (AWD) providing an excellent



opportunity for RAN personnel to train and familiarise themselves with *Cantabria* before they go on to crew the LHD and AWD.

Under Sea 1654 Phase 3, Maritime Operational Support Capability, both *HMAS Success* and *HMAS Sirius* are planned to be replaced by a single class of Combat Support Ship to sustain deployed maritime forces. According to the DCP the ships will be proven design, double-hulled naval vessels compliant with international maritime standards. With First Pass approval sought between 2013 and 2014, and initial materiel up to four years later, now is not a bad time to consider the benefits (or otherwise) of introducing yet another Spanish design into the RAN fleet.

*Cantabria*, a replenishment oiler, was acquired to provide logistical support to the Spanish Navy during day-to-day operations, expeditionary forces or strategic projection deployments, and for humanitarian and disaster relief operations. The vessel has a displacement of 19,500 tons, is 170.4 metres in length, has a beam of 23 metres, and a draught of eight metres. Propulsion is provided by two diesel engines, supplying 10,890 kW to a single propeller shaft, which is fitted with a controllable-pitch propeller. *Cantabria* has a maximum sustained speed of 20 knots and a range of 6,000 nautical miles (11,000 km). It has a crew complement of 122.

Commissioned into the Spanish Navy in September 2010, the ship's capacity includes 8,920 cubic metres of ship fuel, 1,585 cubic metres of JP-5 jet fuel, 215 cubic metres of fresh water, 280 tonnes of ammunition, and 470 tonnes of general cargo. The fuel storage areas are double-hulled. *Cantabria* can replenish three ships simultaneously; one on each side, plus a third via a stern refuelling station. She can carry three **Agusta-Bell** AB.212, two **Sikorsky** SH-3 Sea King, or two **NH Industries** NH90 helicopters to perform vertical replenishment.



## AWD platform training simulator taking shape

**With work started on the Hobart class destroyers in Adelaide, support equipment such as the Integrated Platform Management System (IPMS) training simulator is also taking shape with factory acceptance tests for the training simulator taking place in July and September at Cartagena, Spain.**

The simulator is based on the commercial off-the-shelf system originally developed for the **F100-class** ships of the Spanish Armada. The simulator will be used to conduct the training to enable commissioning crews to bring the three Hobart-class destroyers into service and will be the backbone in providing the knowledge to operate the platform equipment of this advanced ship.

The training simulator equipment will be added to the **Maritime Skills Centre** in Adelaide when the propulsion control unit, the data storage unit, three local operating panels and the simulator/instructor console arrive in the coming months.



The remainder of the equipment – the propulsion control console, damage control console, auxiliary and electrical control console, ship control console and the soft panels – will be incorporated following the successful completion of factory acceptance testing.

All equipment will be installed in the Maritime Skills Centre by March with software delivery,

acceptance testing and commissioning planned for October 2013. Once the crew for the final destroyer Sydney has completed its training at the Maritime Skills Centre, the IPMS Training Simulator and platform system part-task trainers will be relocated to the home port of Sydney for ongoing crew training.

AWD Combat System part-task trainers will also be located in Sydney, along with the Command Team Trainer to be established at HMAS Watson.

## Thales to update Collins sonar

**Thales has been awarded a \$22.2 million contract to update sonar equipment for the Royal Australian Navy's Collins Class submarines. The contract will involve replacing obsolescent electronic components to improve reliability and help to reduce space, weight and power requirements. The majority of specialist engineering and logistics work will be performed in the Thales facility at Rydalmere, NSW.**

Thales currently holds the contract for in-service support for the Collins sonar system and is the original manufacturer of the equipment. The government has allocated an additional \$700 million over the next four years for Collins Class submarine sustainment.

## IOC for MRTT tankers getting close



**Initial operational capability (IOC) is nearing for the Air Force's fleet of KC-30A Multi-Role Tanker Transports.**

Having operated the KC-30A for just over 12 months, 33 SQN has checked through the requirements for IOC, including air-to-air refuelling with the aircraft's hose-and-drogue refuelling pods and airborne logistics support.

The RAAF has accepted four aircraft into service with two being flown by 33 SQN, one in deep maintenance in Brisbane, and another is with **Airbus Military** in Europe,



assisting with further testing of the boom system. A fifth aircraft is expected to be accepted into service later this year, but may also be used to assist in testing of the boom capability in Europe.

In recent months, the KC-30A has refuelled RAAF F/A-18 Hornets during Exercises Kakadu,

Arnhem Thunder and Pitch Black. A simulator facility already active at RAAF Base Amberley allows crews to conduct cockpit and air-to-air refuelling system training.

Following IOC, 33SQN will work towards achievement of full operational capability, which includes use of the aircraft's 17-metre refuelling boom when the KC-30A would be able to support international exercises and operations overseas. The Airbus-developed boom has been involved in a two serious in-flight incidents, with the boom detaching from the A330 aircraft. The first on an aircraft destined for delivery to the RAAF and more recently one destined for United Arab Emirates.

Nevertheless the RAAF's view is that once the refuelling boom is introduced into service next year, the KC-30A will be the best tanker transport in the world, allowing it to refuel a broad range of not only Australian but also international aircraft.



## So how fares the Australian ASLAV upgrade?

**Upgrading the Australian Army's ASLAVs has not gone quite as smoothly as hoped. Back in June 2010 Land 112 Phase 4 ASLAV upgrade, received second pass approval when Armatec Survivability Corporation and General Dynamics Land Systems - Australia (GDLS-A) were awarded**

**a contract to provide survivability enhancements and refurbishment to 113 Australian Light Armoured Vehicles (ASLAV).**

These improvements were to extend the service life of the vehicles and provide increased crew protection against a wide range of threats, including Improvised Explosive Devices (IEDs), landmines, bullets, shrapnel, and explosive blast.

The enhanced-survivability kits were said to represent world-leading, combat-proven, advanced, composite armour technology developed and produced by Armatec Survivability in Canada. The pre-modification, refurbishment, automotive upgrades, and installation of the enhanced-survivability kits would be done by GDLS-A in Adelaide SA. Scheduled to begin in April this year, the combined value of the project was A\$302.8 million.

But it seems that Armatec 'oversold' its solution with the DMO's Warren King telling a Parliamentary Inquiry that while Armatec had represented its upgrade as a low risk, off-the-shelf solution, it was found to be technically risky, involving modifications to the vast majority of ASLAV in one form or another. While the Armatec solution was dropped, the upgrade to the ASLAV fleet is said to continue as a priority project, with



other solutions under consideration, but there is a paucity of information about its progress.

According to official sources as of May last year, the DMO has acquired 144 additional ASLAVs, 59 remote weapon stations capability, nine Crew Procedural Trainers and conducted an automotive standardisation program for the Phase 2 vehicle. The project is currently acquiring Multi Spectral Surveillance Suites for integration on the ASLAV through the ASLAV Surveillance Project. Minor facility upgrades in the three units that operate the ASLAV fleet are also occurring.

The ASLAV Surveillance Project will provide an integrated sensor-based surveillance capability for ASLAV Surveillance variants operated in the Australian Army's Cavalry units. The Multi Spectral Surveillance Suites is a mast mounted radar and electro-optic surveillance system to be fully integrated on the ASLAV-Surveillance variant. The contractor for the delivery and integration of the Multi Spectral Surveillance Suites is US company DRS Sustainment Systems. The project has reached the stage concerned with the production, testing and delivery of 18 Multi Spectral Surveillance Suites units.

Initial materiel release of the Multi Spectral Surveillance Suites is scheduled for December this year (2012), with final release scheduled for April 2013.

In related news **General Dynamics Land Systems-Canada (GDLS-C)** has been awarded a contract modification for upgrade of the Canadian Army's 66 additional LAV III combat vehicles. The latest US\$133.25 million contract modifies the previous US\$1.05 billion award secured by GDLS-C for modernisation of a total of 550 LAV III vehicles in October 2011. Under the new contract, GDLS-C will upgrade the additional 66 vehicles by improving their survivability, mobility and firepower, with an aim to eventually extend the fleet's service life to 2035.

ADM understands the upgraded vehicles will provide the Canadian Army with one of the most advanced and modern vehicles of its type in the world. Survivability improvements include integration of double-V-hull technology and add-on armour protection, as well as energy-attenuating seats to help boost the vehicle's crew protection against mine blasts, improvised explosive device (IED) attacks and other threats.

A powerful engine, robust driveline and suspension and a height management system (HMS) will be incorporated as part of mobility system upgrades to optimise the vehicle's automotive performance, handling characteristics and payload capacity. In addition, the company will enhance the 25mm turret's crew ergonomics and its capabilities by integrating larger hatches, and advanced technologies, including improved fire control, thermal, day and low-light sights and data displays.

Upgrade work under the contract is scheduled to be carried out at the company's facilities in London, Ontario, and Edmonton, Alberta, as well as at its Canada-wide supplier base; it is expected to be complete in 2017. The LAV III is a derivative of the **MOWAG Piranha IIIH 8x8** vehicle, and 651 are currently operational with the Canadian Army as its primary mechanised infantry vehicle.

## TAE wins Manufacturing Logistics Award

**TAE has been awarded the Manufacturing Logistics Award at the Australian Supply Chain & Logistics Awards.**

The award recognises significant achievement within the manufacturing sector with



regard to the integration of manufacturing and the supply chain from raw material procurement through to customer delivery.

TAE's manufacturing capability is centred upon its production of aluminium vacuum brazed components, such as the liquid cooled electronics enclosures it is currently delivering for the **F-35 Joint Strike Fighter** (JSF) aircraft. TAE is the first Australian company to have successfully developed the skills, technology and capability to successfully introduce aluminium vacuum brazing technology and is one of only a small number world-wide to have the capability.

## ADM Online: Weekly News Summary

A summary of the latest news and views in the defence industry, locally and overseas. Check out our webpage for daily news updates on the *ADM* home page and make sure you bookmark/RSS this for a regular visit.

This week applications opened for the second round of the **Skilling Australia's Defence Industry** (SADI) program for 2012-13.

**Drop 3** of the **Cirrus Air Combat Officer Training System** (ACO-TS) entered into operational service with the RAAF School of Air Warfare.

Defence officials finalised a deal between the Australian and Spanish navies for the deployment to Australia of the **Spanish Armada Ship, SPS Cantabria** from mid-February until November 2013.

**Serco** signed an **agreement** to acquire the remaining 50 per cent stake in **DMS Maritime** from its joint venture partner, **P&O Maritime Services**.

**Correction:** In the previous edition of DWP, Thales was listed as a prime contender for JP2072 Phase 2B. This is incorrect as they are teaming with BAE System who are priming the bid. Our sincere apologies for any misunderstandings.

## International

### Protection adds weight to US Ground Combat Vehicle

**The Congressional Budget Office has released a report highlighting a variety of challenges facing the Ground Combat Vehicle program—singling out the nascent technology associated with active protection systems.**

The 9 November CBO report states that many of the developmental hurdles facing the program stem from the service's required level of protection, which has driven the weight of the vehicle to rival that of the Abrams tank. To achieve the US Army's goals, the GCV would weigh from 64 to 84 tonnes, making it the biggest and heaviest infantry fighting vehicle that the Army has ever fielded—as big as the **M1 Abrams**



**tank** and twice as heavy as the **Bradley**, the Army's current infantry fighting vehicle, adding that designing such a vehicle presents important technical challenges. At one stage the GCV was thought to be a potential contender for the Australian Army's Land 400 Land Combat Vehicle program—*Inside Defense*



## Italian NH90s fully operational in Afghanistan

Italy's Task Unit Nemo has quietly assumed full operating capability with the NH90 helicopter in Afghanistan. The first of five Italian Army NH90s deployed to Herat aboard a US C-17 on 20 August and the last arrived on 22 September (all personnel had arrived by 6 September), but details have just emerged that the force has become operational on NH90's first deployment into theatre.

The helicopters are now operating under Task Force Fenice, supporting Italy's contingent in Regional Command-West (RC-W) with troop lift and medical evacuation—*Janes*

## More stealthy submarines

The US Navy's 10th Virginia-class submarine is successfully launched at Huntington Ingalls Industries (HII) Newport News Shipbuilding in Virginia, and construction on the French Navy's third Barracuda submarine moves ahead, we learn that the Russian Navy's first nuclear-powered attack submarine, SSGN Severodvinsk (K-329), has test-fired a Caliber supersonic cruise missile as a part of state acceptance trials in the White Sea.

During the trials, the submerged Sevmas shipyard-built submarine launched the cruise missile that successfully destroyed a sea target validating its capability. With a range of more than 2,500km, Caliber missiles have been designed to can carry nuclear or conventional warheads and are capable of changing trajectory by altitude and vector on nearing the target.

The 111m-long and 12m-wide **Yasen-class submarine** has a full load displacement of around 13,000 tonnes, can cruise at a top speed of 35 knots and accommodate a crew of 50. Reduced levels of acoustic field make the double-hulled single-shaft nuclear submarine one of the world's most silent and stealthy submarines. The submarine can support anti-submarine and anti-surface warfare, surveillance operations and special missions for the navy.

Russia plans to spend \$166 billion on its military rearmament program up to 2020, which will see the navy equipped with ten nuclear attack submarines and 20 diesel-electric submarines.





## DCNS completes first hull ring of SSN Tourville

DCNS's Cherbourg centre has completed the first pressure hull ring for the third Barracuda-type nuclear-powered attack submarine (SSN) almost one month ahead of schedule. This is an important milestone for a particularly ambitious DCNS-led program.

The first ring of Barracuda No. 3 SSN Tourville was completed less than two years after that of Barracuda No. 2, SSN Duguay-Trouin.

The Barracuda construction program is organised like a volume production program with clearly defined cost, delivery date and performance targets. Three Barracuda submarines are currently under construction on a program that is being carefully optimised and scheduled to make the best use of critical resources.

The first of the 21 steel rings making up the pressure hull of a Barracuda submarine is actually ring No. 7. It is about nine metres in diameter, over three metres long and forms part of the aft third of the submarine. Ring No. 7 will house the submarine's powerplant.

The Barracuda program will make a vital contribution to the renewal of France's naval forces and represents a significant proportion of the group's production workload, with DCNS teams and facilities expected to work on the program until 2027.

In December 2006, French defence procurement agency DGA awarded the overall Barracuda contract to DCNS, appointing the group as program prime contractor and Areva-TA as nuclear powerplant prime contractor. The firm order placed at the same time calls for the development and construction of first-of-class SSN Suffren, the first of six Barracuda-type SSNs. The contract also covers through-life support for all six submarines during their first years of operational service. The second and third tranches, confirmed in 2009 and 2011 respectively, cover the construction of the second and third of type SSN Duguay-Trouin and SSN Tourville.

## ViaSat awarded MIDS-LVT Lot 13 production orders

**ViaSat Inc. has been awarded Lot 13 orders valued at \$33.9 million for Multifunctional Information Distribution System-Low Volume Terminals (MIDS-LVT) for the US Government and Turkey.**

The orders resulted from a competitive procurement through the Space and Naval Warfare Systems Command (SPAWAR) and were awarded under the MIDS Indefinite





Delivery/Indefinite Quantity contract initially executed in March 2010. The MIDS LVT terminals are for US Government E/A-18G, P-3, EP-3E, P-8A, MH-60R, E-2D, B-1, and ground terminal applications (63 per cent), and FMS sales to Turkey (37 per cent).

“These awards reflect the government’s recognition of our commitment to maximizing Link-16 availability for the warfighter by delivering ahead of schedule and rapidly turning around any returns,” Dr Jay Kaufman, general manager of ViaSat Tactical Data Links, said.

MIDS-LVT forms the backbone of the **Link-16** network across the US DOD and the international coalition. Core terminal functions include not only Link-16 data, but secure voice, and TACAN capabilities on selected terminals.

## LM radar production in Indonesia



**Lockheed Martin and Indonesian technology firm PT CMI Teknologi (CMI) have completed a production readiness review that qualifies CMI to begin in-country manufacturing for the TPS-77 and FPS-117 long-range surveillance radars.**

Lockheed Martin and CMI are jointly pursuing the **National Airspace Surveillance – Republic of Indonesia** (NASRI) program, with the intent to produce more than 20 new radars to improve airspace surveillance, safety, and management over the Indonesian Archipelago in support of the government’s defense revitalization initiative.

The production readiness review is the latest step in supporting the Indonesian government’s efforts to greatly enhance air sovereignty and surveillance over the country’s more than 17,000 islands, and to expand Indonesia’s industrial capabilities. Data feeds from the new network will also enhance civilian air traffic control, including commercial air traffic management, which is currently handled by radars in nearby Singapore.



PT CMI Teknologi of Bandung, Indonesia, is a small, privately owned technology company specializing in microwave design and manufacturing. The company currently holds contracts for the development and support of Indonesian military radar systems. Lockheed Martin signed a teaming agreement with CMI earlier this year and in August Lockheed Martin issued a subcontract to CMI to begin the qualification process in building radar row receivers.

## ITT Exelis an awardee on GTAC contract

**ITT Exelis has been selected as an awardee on the Global Tactical Advanced Communication Systems and Services (GTACS) indefinite-delivery, indefinite-quantity contract with a potential ceiling of US\$10billion. The five-year multiple task order contract was issued by the US Army's PEO C3T (Program Executive Office Command, Control and Communications-Tactical). It calls for the rapid acquisition of a wide range of tactical command, control and communications systems, hardware, software, engineering services and logistics support services.**

The awardees will also provide support to other Department of Defense organizations and US federal government agencies in a variety of areas. The contract structure allows for competitive delivery order awards for C3 solutions among pre-qualified contractors in a cost-effective and timely manner, maintaining competition throughout the term of the contract period.

"The initial task orders from this contract are expected to be released in 2013 and will fall under the three key task areas of Development, Production and Deployment, and Sustainment," said Bob Durbin, acting vice president and general manager of the Exelis Communications and Force Protection Systems business area. "As a flexible and agile company with affordable and ready now solutions, we are uniquely suited to meet our Army customer's needs under this contract helping them meet demanding mission requirements."

There were a total of 20 awardees falling into two categories of large and small companies. Of those 20, 14 were large and 6 were small companies.

## Bullet-proof uniforms?

**Scientists have theorised that paper-thin composite nanomaterials could stop bullets just as effectively as heavy weight body armour, but progress has been hampered by their inability to reliably test such materials against projectile impacts. Researchers at Massachusetts Institute of Technology (MIT) and Rice University have developed a breakthrough stress-test that fires microscopic glass beads at impact-absorbing material. Although the projectiles are much smaller than a bullet, the experimental results could be scaled up to predict how the material would stand up to larger impacts.**

The glass beads, described as "millionths of a meter in diameter," are propelled using a laser pulse technique developed by MIT's Keith Nelson over several years. His technique was modified with the help of scientists from Rice University in experiments conducted at MIT's Institute for Soldier Nanotechnologies. Their work, reported in the



journal Nature Communications, was supported by the **US Army Research Office**, which is keen to reduce the burden on soldiers who currently wear armor that contains cumbersome plating an inch thick.

The team's self-assembling polymer is made by alternating flexible and rigid material layers just a nanometer thick, which can be seen clearly in cross-section with an electron microscope. This allows them to see precisely how the material has deformed after an impact. By studying multiple impacts, the team found that their material was 30 percent more resilient to head-on (rather than edge-on) collisions, a discovery which could change how current protective materials are made.

"It's a novel and useful approach that will provide needed understanding of the mechanisms governing how a projectile penetrates protective vests and helmets," said Donald Shockey, director of the Center for Fracture Physics at SRI International (unaffiliated with the project), as quoted by David Chandler of the MIT News Office.

The researchers still need to develop a way to record these impacts in real time in order to best understand them, but their tests could accelerate the development of paper-thin military body armor or shielding for satellites, space suits, and shuttles, and more.

## FORTHCOMING EVENTS.....next page



# FORTHCOMING EVENTS

For a full list of defence and industry events, head to **ADM's** online events page at [www.australiandefence.com.au](http://www.australiandefence.com.au)

## ADM's Social Media in the Defence Environment

**DATE:** 5-6 December 2012, Hotel Realm, Canberra

**ENQUIRIES:** ADM Events - Jamie Burrage, Ph: 02 9080 4321;

**Email:** [jamie.burrage@informa.com.au](mailto:jamie.burrage@informa.com.au) **Web:** [www.admevents.com.au](http://www.admevents.com.au)

Social media in the private sector has been a bumpy journey, where companies tread a fine line between credibility and ridicule whilst getting their policies right. In the public sector, and Defence in particular, the evolution of social media has created opportunities, whilst also highlighting the need for social media policies. This inaugural conference will examine the opportunities that social media can bring to the Australian Defence Force and the Department of Defence. By mitigating the dangers of misuse, social media can be an excellent tool for announcements, for recruitment, for connecting and for selling. There is no denying the place of social media in the modern workforce. Hear speakers discuss what tools and policies can help harness social media into an essential part of the Defence workplace.

## ADM2013: 10th Annual ADM Defence/Industry Congress

**DATE:** 12 – 13 February 2013, Hyatt Hotel, Canberra

**ENQUIRIES:** ADM Events - Jamie Burrage, Ph: 02 9080 4321;

**Email:** [Jamie.burrage@informa.com.au](mailto:Jamie.burrage@informa.com.au) **Web:** [www.admevents.com.au](http://www.admevents.com.au)

The annual ADM Congress has evolved into a pivotal event in the Defence calendar, attracting senior officials from all areas of the Defence Force and Defence Industry. It is a critical forum for any organisation operating within the defence business sector. Also do not miss the ADM Awards Dinner. The dinner is the perfect opportunity for you to continue networking with colleagues and new contacts made at the Congress. More details to be released closer to the date

## Avalon 2013: Australian International Airshow and Aerospace & Defence Exposition

**DATE:** 26 February - 03 March 2013, Avalon Airport, Geelong

**ENQUIRIES:** Aerospace Maritime Defence Association Ph 03 5282 0500;

**Email:** [airshow@amda.com.au](mailto:airshow@amda.com.au); **Web:** <http://www.airshow.net.au>

The Australian International Airshow and Aerospace & Defence Exposition is the essential aviation, aerospace and defence event for the Asia Pacific. Industry-only trade sessions will be held Tuesday to Thursday (all day) and Friday will be both a trade and public day. The exposition will open each day from 9am until 5pm. Associated industry and technology conferences, seminars and symposia will be held at Avalon and in Melbourne and Geelong during show week.

