



DEFENCE WEEK

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Australia signs Arms Trade Treaty

Australia is among the 67 countries which have signed the UN's Arms Trade Treaty (ATT) aimed at regulating the global trade in conventional weapons – from tanks, warships and combat aircraft, to assault rifles and their ammunition.

Defence Materiel Minister **Dr Mike Kelly**, representing the Foreign Minister, said Australia had long been committed to addressing the dire consequences of unregulated arms trading and he was proud Australia was amongst the first countries to sign the historic Treaty that day. He said Australia co-authored the Treaty, and had been at the forefront of efforts to secure it.

Adoption of the ATT, he said, was not an end in itself but a step along the way. "We look forward to continuing to work closely with the international community and civil society and to building on our commitment today."

Australia will provide \$1million to a multilateral assistance fund to help developing countries implement the Treaty. The funds will support measures such as drafting national legislation, setting up export control arrangements and building expertise in enforcing arms controls.

The Treaty will be tabled in the Australian Parliament, for consideration by the Joint Standing Committee on Treaties whose recommendation is necessary to ratify it.





Navantia S-80 submarine needs lapband

Tom Muir

The US Navy has hired Electric Boat as contractor for a \$14m FMS agreement with the Spanish Ministry of Defence, to provide technical assistance and review the S-80 Submarine project for almost three years. S-80 is Spain's first submarine design and is of interest to Australia.

According to Spanish press reports, the S-81 Isaac Peral, the first member of the class of four boats, is said to be between 75 tons and 100 tons overweight. The diesel-electric submarine weighs 2400 tons submerged and the excess weight could prevent it from surfacing after it dives. This submarine was scheduled to be delivered in 2015 at a cost of about \$700 million, but it is estimated that correcting the weight and balance issues could take up to two years.

Interestingly, in 2003, the British MOD solicited EB's help for its **Astute submarine program** through a foreign military sales agreement with



the US. With a substantial gap between the design and construction of the **Vanguard class** and the start of the Astute program, submarine design and construction skills had atrophied in the UK, and about 100 experienced EB designers and managers worked with **BAE Systems** on the design effort.

Just over a year ago Prime Minister **Julia Gillard** and Defence Minister **Stephen Smith** announced the government would provide \$214m for the next stage of the Future Submarine Project. The funding will go towards further detailed studies and analysis to inform the design of Australia's next submarine. The studies include military off the shelf design studies to be undertaken by three European ship building companies:

- DCNS (France), designer of the Scorpene
- HDW (Germany), designer of the Type 212 and Type 214 submarines
- Navantia (Spain), designer of the S-80 submarine.

The statement said these studies would help inform the government on the viability of a military off the shelf design and what modifications would be required to meet specific Australian conditions.





UAVs: Shadowy news and notes

Tom Muir

Last month Australian soldiers from the Shadow UAV Group 2 completed their eight-month rotation in Tarin Kot, Afghanistan, logging about 3400 hours of flight in support of ISAF operations.

The troops, from 20 STA Regt in Brisbane flew the Shadow 200 UAV in support of soldiers on the ground. Shadow Battery Commander Major **Scott Lehmann** said the deployment, mostly over the cold winter months, had been challenging, having to work

within the system's capabilities in a harsh environment.

Shadow Group 2 has now been replaced by personnel from 131 STA Bty, who helped some Navy aircraft technicians get hands-on maintenance experience with the Shadow ahead of their combined deployment in May.

Across the Pacific, the US Army is moving ahead with plans to ramp up its capacity to employ UAVs in combat, including the development of a new **MQ-1C Gray Eagle** and **RQ-7 Shadow** force package for expeditionary operations. The push to further integrate UAVs in the army's force structure comes as the US military wrestles with the implications of the White House's strategic pivot to the Asia-Pacific region and its pledge to reduce UAV strike missions following the US withdrawal of 'combat' forces from Afghanistan by the end of 2014.

The US Army also plans to acquire the technical data package for the Shadow unmanned aircraft system's future engine, to allow the service to run a competition for Shadow production and sustainment.

As we have reported previously it wants to replace the system because of reliability issues encountered in the heat and high altitudes of Afghanistan.

The service plans to test a variety of engine options, choose two vendors to further develop propulsion systems, acquire the technology data package for one and use engineering change proposals to install and field the engines. Once an engine has been chosen, the Army will hold a competition for the production and sustainment of the government-owned engine design, with a contract award expected in FY-15. *-Inside Defense/TM*

ADM Cyber Security Conference

Date: 12-13 June 2013, Hotel Realm, Canberra

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Second trilateral defence meeting for Australia, Japan and the US

Australian Minister for Defence Stephen Smith, Japanese Minister of Defence Itsunori Onodera, and US Secretary of Defence Chuck

Hagel held trilateral defence ministerial talks in Singapore June 1 on the margins of the International Institute of Strategic Studies Shangri-La Dialogue.

This was the second meeting of its kind among the three nations' top defence officials.

The defence ministers exchanged views on the regional security situation, and share the recognition that North Korea constitutes a serious destabilising factor for the entire East Asian region. They discussed opportunities for strengthening trilateral cooperative efforts, through information sharing, joint military training and exercise coordination. They will conduct a joint study on defence capacity building efforts in Southeast Asia and Oceania.

The three ministers outlined the following strategic goals for trilateral cooperation:

- Build a community of interest in the region that promotes peaceful resolution of disputes in accordance with international law and that establishes defence cooperation as a regional norm.
- Strengthen our capacity to respond to regional challenges, including regional disasters, and provide humanitarian assistance and disaster relief, through increased practical cooperation.
- Promote freedom of navigation and maritime security in the region's sea lanes, and other international rights.
- Improve regional defence capacities to support long term regional peace and stability.
- As a stabilising regional presence, build confidence and encourage transparency within the region.

Building on these strategic goals, the three ministers pledged to continue progress on the action plan as agreed last year to promote a dynamic and flexible trilateral defence relationship in order to enhance the security and prosperity of the region.

Defence and local industry benefit from University collaboration

The Defence Systems Innovation Centre (DSIC) has welcomed the University College London (UCL) as an Affiliate Partner.

This partnership will enable DSIC and UCL to collaborate on research and training opportunities for the Australian Defence community. Furthermore, the collaboration will help to increase the access of the Australian Defence community to global best practice and expertise.



UCL Australia Chief Executive, **David Travers** said the new Affiliate Partnership will allow UCL to initially explore training and research opportunities with DSIC and the Australian Defence community.

“UCL enjoys a good relationship in England with many of the UK defence companies, which are already in South Australia, including **BAE Systems** and **Ultra Electronics**. We hope our expertise in areas such as Systems Engineering, could support projects such as the **Sea 1000** (future submarine) program,” Travers said.

Minister for Employment, Higher Education and Skills, Hon **Grace Portolesi** MP said “This partnership provides an outstanding opportunity to further strengthen South Australia’s position as a hub for research excellence in defence. This partnership between UCL and the Defence Systems Innovation Centre will further improve our capacity in this field and provide a further boost to existing partnerships between local institutions and industry.”



Exercise Bell Buoy 13 a success for NZ

The Royal New Zealand Navy (RNZN) has completed hosting an International Maritime Trade Protection exercise involving participants from 10 nations.

Exercise Bell Buoy 13, held 13-23 May 2013, was the first time the exercise has been hosted by the Royal New Zealand Navy.

The exercise was an international affair, bringing together a range of military and maritime trade specialists from **Australia, Brazil, Canada, Chile, Korea, Singapore, UK, US**, and one observer from **Uruguay**.

The annual inter-Navy exercise for the Pacific and Indian Oceans Shipping Working Group (PACIOSWG) for the protection of maritime trade and shipping.

Exercise Convener, **Captain Phil O’Connell** of the RNZN said Bell Buoy was aimed at testing the capabilities of the member nations’ participants to respond to a range of significant events affecting shipping.

Exercise events were largely based on recent events in different parts of the world, and provided a realistic setting to the challenges and obstacles faced in maintaining secure shipping routes in the South West Pacific and beyond.

“Key highlights for the exercise participants included conducting rapid port assessments, working with ship’s masters, pilots and port companies to conduct briefings and operating with other nations in a deployed combined joint task force environment,” said CAPT O’Connell.

Other exercise activities included planning a range of operations and training. Exercise participants practised giving ships navigation warnings alerting them to pirate activity, ensuring that charts and publications provided consistent advice on what routes to take, who to report to, self-protective measures, and what to do when attacked.

The participants also tested civilian and military cooperation (CIMIC) doctrine, designed to establish and maintain cooperation between the military, civilians, civil authorities and other non-governmental aid organisations.





Safeskies date announced

The 2013 Safeskies conference is to be held at the Hotel Realm Canberra on 16th and 17th October 2013.

The 2013 conference has as its theme 'People and Technology', and speakers will probe some of the

issues surrounding this theme, including UAVs, rotary wing aircraft developments, pilot training and automation, cabin safety, the latest technology in large passenger jets and a case study from the Air France flight 447 accident investigation. There will be speakers from the UK, USA and Europe; and from Boeing, Augusta and Cranfield University.



ADM Online: Weekly 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, the Bridge for the first destroyer that is under construction as part of the **Air Warfare Destroyer (AWD) project** was this week lifted onto the ship structure.

Three tenderers were selected to progress **Project Air 9000 Phase 7**, which will provide a new helicopter aircrew training system to meet the future rotary wing training needs of the ADF.



And, the Minister for Defence,

Stephen Smith, introduced the Defence Legislation Amendment (**Woomera Prohibited Area**) Bill 2013 into Parliament.



International



US Air Force establishes F-35 IOC target

The US Air Force expects to declare F-35A Lightning II initial operation capability (IOC) in December 2016.

The announcement was included in a joint report detailing service-specific IOC requirements and dates for each of the

F-35 variants that was delivered to Congress.

“The Air Force has spent the last six months looking at our initial capability requirements and the expected availability date. This announcement is exciting news for the Air Force,” Secretary of the Air Force **Michael Donley** said.

“It highlights to members of Congress, our international partners, and the American public that the program is on track to bring the US military and our allies this critical capability.”

Congress directed the secretary of the Air Force and secretary of the Navy to provide a report that details the IOC dates, requirements and capabilities for each of the F-35 variants by June 1.

The Air Force will achieve IOC when the first operational squadron has 12 or more aircraft and Airmen are trained and equipped to conduct basic close air support, interdiction, and limited suppression and destruction of enemy air defence operations in a contested environment.

Republic of Korea - F-35 Aircraft Weapons

The Defense Security Cooperation Agency notified Congress May 21 of a possible Foreign Military Sale to the Republic of Korea (ROK) for F-35 aircraft weapons and associated equipment, parts, training and logistical support for an estimated cost of \$793 million.

The Government of the Republic of Korea (ROK) has requested a possible sale of F-35 aircraft weapons. These aircraft weapons include the following:

- 274 AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM)
- 6 AIM-120C-7 AMRAAM Guidance Sections
- 530 Joint Directed Attack Munition (JDAM) Tail Kits, BLU-109/KMU-557C/B (GBU-31) w/SAASM/AJ
- 4 JDAM BLU-109 Load Build Trainers
- 6 MK-82 Filled Inert Bombs
- 4 BLU-109 Inert Bombs
- 1312 FMU-152A/B Fuzes (FZU-63 Initiator)
- 542 GBU-39/B Small Diameter Bombs
- 530 BLU-109 2000LB Penetrators



- 780 GBU-12 Bomb
- 4 GBU-12 Dummy Trainers
- 154 AIM-9X-2 (Blk II) Tactical Missiles w/DSU-41
- 33 AIM-9X-2 (Blk II) Captive Air Training Missiles (CATM)
- 7 AIM-9X-2 (Blk II) CATM Guidance Units
- 14 AIM-9X-2 (Blk II) Tactical Guidance Units

Also included are containers, missile support and test equipment, provisioning, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, US Government and contractor engineering and technical support, and other related elements of program support. The estimated cost will be \$793 million.

The principal contractors will be **Raytheon Missile Systems Company**, The **Boeing Corporation**, **Lockheed Martin Missile and Space**, and **Kaman Precision Products**. There are no known offset agreements proposed in connection with this potential sale.



Active protection systems for ASLAVs?

Tom Muir

General Dynamics Land Systems (GDLS) is leading an effort to develop the first North American combat vehicle with a fully integrated Active Protection System (APS). The company recently concluded a successful CDR of its APS project. The next major step is to validate a fully integrated APS on a Light Armoured Vehicle III (LAVIII) demonstrator, scheduled for later this year.

Active Protection Systems enhance crew protection, survivability and situational awareness against advanced man-portable weapons by intercepting and defeating

threats before they reach the vehicle. It is the only technology capable of defeating certain threats without significantly sacrificing vehicle mobility and transportability. GDLS claims its APS is the only fully integrated technology capable of destroying certain threats without impacting vehicle mobility and transportability.

The General Dynamics-led team will demonstrate APS technology readiness and integration efficiencies, and reduce the time it takes to bring this survivability technology to customers. General Dynamics is funding the effort and is providing program leadership and execution, along with system design authority, supplier management, integrated design, hardware build and integration and test management support. And



while GDLs (Australia) may offer this APS as a survivability upgrade for the ADF's ASLAVs we suspect similar systems may well find applicability with the **Land 400** infantry combat vehicle concept when it arrives!

Canada has long had interest in APS and the Ferret small arms detection and localisation system was developed by **MacDonald Dettwiler & Associates (MDA)** and the **Defence Research and Development Canada** facility at Valcartier, developing the Ferret small arms detection and localisation systems for installation on some GDLs Coyote (8 × 8) reconnaissance vehicles deployed to Afghanistan. Ferret systems were also provided to Japan, the US Army and Marine Corps for trials purposes.

Further south, US R&D specialist **Artis** has announced that its **Iron Curtain** active protection system (APS) has successfully defeated all threats during recent US government testing. The APS was integrated with a combat vehicle by **BAE Systems** as a system demonstrator for the tests.

Iron Curtain protects military vehicles and other assets by intercepting threats such as rocket-propelled grenades (RPG) inches from the vehicle and rendering them inert, even if the threat was fired from extremely close range. Iron Curtain uses two independent sensors, radar (developed by **Mustang Technology Group**) and optical, high-speed computing, and tightly controlled countermunitions to minimise the false alarm rate and provide extraordinary system effectiveness and reliability.

Although there is currently no active program within the US military to acquire an APS for ground vehicles, the threat to personnel from RPGs and similar remains. These latest tests have reinforced Artis' position that the system is ready for deployment.



UUV subhunters

Two complementary prototype submarine hunting systems have been tested by the US Defense Advanced Research Projects Agency (DARPA) as part of its Distributed Agile Submarine Hunting (DASH) Program.

The prototypes demonstrated functional sonar, communications and mobility at deep depths, furthering DASH's goals to apply advances in deep-ocean distributed sonar to help find and track quiet submarines.

The first prototype, SAIC's **Transformational Reliable Acoustic Path System (TRAPS)**, is a fixed passive sonar node designed to achieve large-area coverage by exploiting advantages of

operating from the deep seafloor. This expendable, low-size node communicated to a stationary surface node via wireless acoustic modems, with further secure RF reach back to the performer's facilities via satellite.

The second prototype is the **Submarine Hold at Risk (SHARK)**, an **unmanned underwater vehicle (UUV)** developed by a team led by Applied Physical Systems (APS). SHARK intends to provide a mobile active sonar platform to track submarines after initial detections are made. APS team member **Bluefin Robotics** recently deployed the prototype to depth in February 2013.

A third DASH team member, the **Woods Hole Oceanographic Institution**, supported the physical network layers that both teams used. TRAPS and SHARK are scheduled to demonstrate their core sonar functionality together. Subsequent efforts may follow to realise multiple sonar nodes as well as the integration of the SHARK UUV with its sonar.—*DARPA*



Windows 7 for MQ-4 Triton!

Northrop Grumman Aerospace Systems has received a **\$15.3 million cost-plus-award-fee contract modification** to upgrade some **MQ-4C Triton** components from **Windows XP to Windows 7**.

Microsoft is ending support for XP, hence the shift, which will happen in quite a few US military programs. Some wonder about the security implications of using Windows at all in an incredibly expensive autonomous system, but that's a separate discussion.



LM successfully completes LRASM Vertical Launch System Tests

Lockheed Martin has successfully completed **MK 41 Vertical Launch System (VLS) "push-through" testing** of a simulated **Long Range Anti-Ship Missile (LRASM)**.

Four consecutive tests verified that the simulated LRASM can break or "push through" the MK 41 canister's forward cover without causing damage to the composite structure, air data probe or coatings of the missile. The testing was part of a Lockheed Martin-funded shipboard integration effort to prove LRASM can successfully function as an **Offensive Anti-Surface Warfare (OASuW)** weapon. The push-through testing is an important risk reduction milestone critical to demonstrating LRASM's surface launch capability.

The push-through testing, as well as a successful missile-to-canister fit check and integrated test of the weapon control system and VLS, significantly reduced risk on the



program. Lockheed Martin will fly a **Boosted Test Vehicle (BTV)** version of LRASM from a MK 41VLS platform later this year, as well as in two government-funded Controlled Test Vehicle flights in 2014.

CAE opens depot in China

CAE has announced the opening of a second full-flight simulator spares depot in China.

This depot is the latest addition to CAE's established support and logistics infrastructure for customers in the region and will lend efficiencies to the turnaround time of demanded parts. The depot will be located at the Pudong Airport Free Trade Zone (FTZ), Shanghai. The first depot in China opened in 2009 and is located in Zhuhai.

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FORTHCOMING EVENTS

For a full list of defence and industry events, head to **ADM's** online events page at www.australiandefence.com.au

ADM Cyber Security Conference

DATE: 12-13 June, 2013, Hotel Realm, Canberra

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

Email: Jamie.burrage@informa.com.au **Web:** www.admevents.com.au

ADM's 3rd Cyber Security Summit will see stakeholders from Australia's Defence and National Security agencies address the current and emerging cyber threats to Australia's security. More details to be released closer to the date.

Land Environment Working Group

DATE: 21 June 2013, National Convention Centre, Canberra

ENQUIRIES: Erin Frazier: erin.frazier@defence.gov.au, Ph: 6265 4820

Web: www.govdex.gov.au

This meeting is an opportunity for Industry representatives to discuss projects in the DCP with project managers. The way ahead for Land Development Branch in Capability Development Group will also be discussed. Interested participants can register and RSVP for the event through the Govdex website. Access to this website can be granted by sending an email to Erin Frazier.

DSEI

DATE: 10-13 September, 2013, ExCel, London

ENQUIRIES: **Web:** www.dsei.co.uk

DSEI is the largest fully integrated defence and security show in the world, featuring Air, Naval, Land and Security show content. Based in ExCeL, London every two years, the event provides unrivalled access to key markets across the globe.

SimTecT

DATE: 16 Sep - 19 Sep, 2013, Brisbane Convention and Exhibition Centre, Queensland

ENQUIRIES: **Web:** www.simtect.com.au

SimTecT is the annual Simulation Technology and Training Conference held by Simulation Australia. Since its inception in 1996, SimTecT has grown to become Australasia's premier simulation conference for industry, government and academia.

2nd annual ADM Defence Support Services Summit

DATE: 19 Sep, 2013, Hyatt Hotel, Canberra

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

Email: Jamie.burrage@informa.com.au **Web:** www.admevents.com.au

The Defence Support and Reform Group has an annual budget of \$3.9 billion, with an asset base in excess of \$20 billion and around 2,600 civilian and 1,100 military staff. It provides a diverse range of products and services to support over 100,000 ADF personnel and Australian Public Service (APS) employees.

Pacific 2013

DATE: 07 - 09 Oct, 2013, Sydney Convention & Exhibition Centre, Darling Harbour

ENQUIRIES: Web: www.pacific2013imc.com

Pacific 2013 IMC provides a unique opportunity for people involved in maritime and naval affairs around the world to discuss the latest maritime developments in design, naval architecture, engineering, science and technology. With the concurrent Maritime Exposition, the event will provide a meeting place for industry representatives to exchange ideas and to establish personal and business contacts.

SIA 2nd Submarine science, technology and engineering conference

DATE: 15 - 17 Oct, 2013, Adelaide

ENQUIRIES: Web: www.submarineinstitute.com/sia-conferences/

The peak event in Australia for engineering of what is one of the most complex Defence assets - conventional submarines. In addition the conference covers the full range of underwater technologies, many of which are relevant and in use for under-sea resources exploration and exploitation.

This conference also provides a national focus for shipbuilding and land-based research, development, test and evaluation and systems integration relevant to submarines.

Safeskies

DATE: 16 - 17 Oct, 2013, Hotel Realm Canberra

ENQUIRIES: Web: www.safeskiesaustralia.org

Safeskies Conferences Inc. is an Australian based not-for-profit organisation which holds a biennial aviation safety conference in Canberra. The 2013 conference has as its theme 'People and Technology', and speakers will probe some of the issues surrounding this theme, including UAVs, rotary wing aircraft developments, pilot training and automation, cabin safety, the latest technology in large passenger jets and a case study from the Air France flight 447 accident investigation. There will be speakers from the UK, USA and Europe; and from Boeing, Augusta and Cranfield University.

