

# THE NAVY

**SPECIAL  
EDITION**

THE MAGAZINE OF THE NAVY LEAGUE OF AUSTRALIA

**VOL 74 No4**

## **THE DEFENCE WHITE PAPER 2013 (MARITIME)**



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**AUSTRALIA'S LEADING NAVAL MAGAZINE SINCE 1938**

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The first Canberra class LHD, CANBERRA, at sea (sort of) being towed into deep water to be lifted on to the back of a heavy lift vessel (see below). The ship will transported to Williamstown near Melbourne for the fitting of the island superstructure. (Navantia)



CANBERRA lifted out of the water by the heavy lift ship *Blue Marlin* for transport to Australia. (Navantia).





## Volume 74 No.4

# THE NAVY

THE MAGAZINE OF THE NAVY LEAGUE OF AUSTRALIA

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### Front cover:

The RAN's second Canberra class LHD ADELAIDE being launched in Spain. (RAN)





## THE NEXT WHITE PAPER

The Gillard Government's assault on Defence appears to be continuing. As we highlighted in the previous edition's *From the Crows Nest* the defence budget was slashed to levels not seen since 1938. This is despite no indication of peace breaking out all over the world. Quite the opposite in fact. The reason for the budget slashing appears to be just an attempt to prop up the government's election chances next year through the possibility of producing a budget surplus, something the ALP hasn't been able to do since 1989.

Since the budget announcement the government has forced Navy into accepting two political solutions to its operations and budget. The first was the signing of a deal to have electricity for HMAS STIRLING in WA provided by an experimental and very costly wave action machine. The cost to Navy of having to accept such 'green' trendy policy is about twice as much as continuing to buy electricity from the standard power grid. No supplement to Navy's budget has been announced by government.

The second assault involves the cruise ship industry's use of Garden Island in Sydney. Earlier this year the government set up a review panel to examine the question 'can the cruise ship industry use Navy's Garden Island in Sydney without affecting naval operations'.

The review panel reported that cruise ship operations at Garden Island were not in Navy's or the national security interest and were essentially 'incompatible' with naval operations.

Despite this the Prime Minister announced at the ALP conference in Sydney that she would instruct Navy to do exactly what her review had advised her not to. Of course Navy can accommodate four large super liners each year for separate periods of 24-48 hours, naval ships are inherently mobile and can 'camp out' in the Harbour for that time! But the fact that this was done for purely political and publicity reasons sets a very dangerous precedent for Australia's national security.

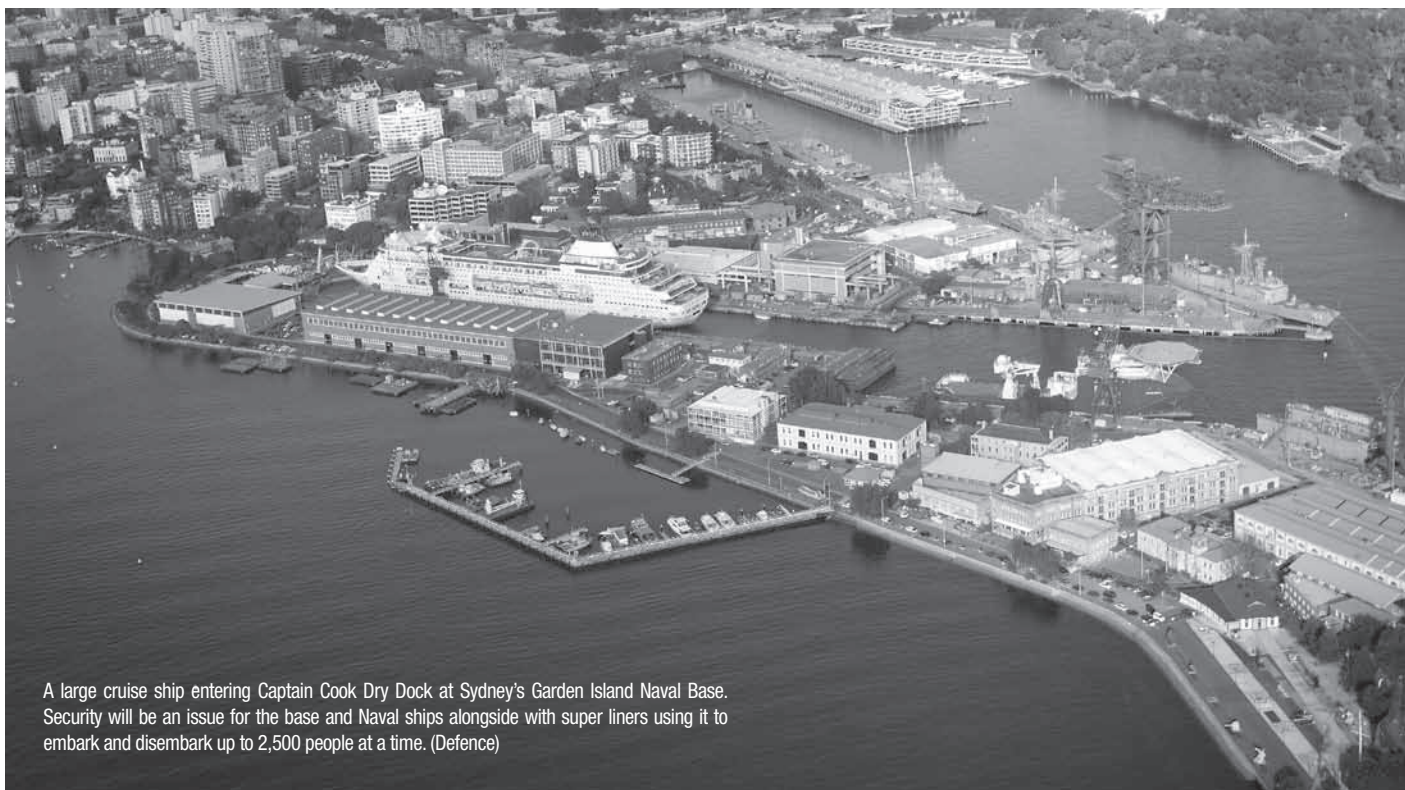
Both events have indicated what the current government thinks of

Defence: that it is not an election winner in its own right, but can be used to win an election. This does not bode well for the upcoming White Paper on defence. As the budget has already been set and capability projects severely impacted for the next 10 years, what the White Paper will almost certainly say will be totally irrelevant to our current and future security circumstances. It will in all likelihood provide a dishonest veneer of endorsement to the Government's slashing of the defence budget. And possibly try to legitimise even more damaging cuts (perhaps the government believe ALP security and National security are one in the same?).

This would mean irreparable damage to Navy's plans for the future in terms of ship and submarine replacements. It would certainly affect plans for add on capabilities such as Tomahawk cruise missiles and SM-6 ultra long range fire and forget anti-aircraft missiles.

The problem with this strategic formulation approach is that it's akin to putting the cart before the horse. You need a strategy first in order to work out where your financial resources go. Not the other way around. That approach will lead to niche capabilities with no general utility across the spectrum of conflict and a return to the cheap and mostly useless Fortress Australia strategic model.

To highlight the difference between reality and politics, this edition of *The Navy* carries articles which propose what the White Paper should look like in the maritime sense. It will make for an interesting comparison when the real White Paper is published, which, on current poll projections, may be the shortest lived Defence White Paper in Australia's political history.



A large cruise ship entering Captain Cook Dry Dock at Sydney's Garden Island Naval Base. Security will be an issue for the base and Naval ships alongside with super liners using it to embark and disembark up to 2,500 people at a time. (Defence)

In June last year the Federal Government decided to conduct an Independent Review of enhanced cruise ship access to Garden Island.

The Review was to assess the current and future requirements of Navy and whether there was scope to enhance cruise ship access to Garden Island without adversely impacting on its priority national security role of supporting Navy maritime operations.

The League was concerned that unless this priority role was at all times respected Naval operations would be adversely affected. The League made a submission to the Review. Our submission made the following points:

- In the next few years Navy is to acquire two large Landing Helicopter Dock ships and three Air Warfare Destroyers. In addition, it has recently acquired a Landing Ship Dock vessel. All these vessels are likely to be based at Garden Island.
- It is hard to envisage where else on the east coast these ships could be based. There is at present no alternative on the east coast capable of providing the support available at Garden Island.
- In addition to the ships mentioned other Royal Australian Navy ships and ships of foreign navies will require the use of Garden Island facilities.
- To provide a comparable facilities at another site on the east coast, assuming such a suitable site could be found, would be very expensive. It would also take some years to establish.
- Establishing a base outside Sydney is not just a question of physical facilities. Sydney has a large industrial base and a large population with a wide range of skills, including those required in operating a major naval dockyard.
- It is desirable from the point of view of Navy personnel and their families that Navy bases be in or near large population centres.
- It is the view of the League that there is no alternative site capable of meeting Navy operational and maintenance requirements on the east coast other than Garden Island.

In March this year the Minister for Defence released the report of the Independent Review.

The review found that current and future Navy capability requirements of Garden Island are essentially incompatible with cruise ship access over the long term, except on the existing basis, where a limited number of requests for berth bookings is considered by Navy based on extended notice and limited visits per year.

The Review also found that provision of guaranteed shared access to existing berths at Garden Island cannot be achieved without adversely impacting on naval operations. The review noted that Defence's long-term national security task should not be surrendered to the seasonal commercial requirements of the cruise ship industry.

However, in July the Prime Minister announced that the Federal Government would guarantee three cruise ships a berth each at Garden Island over the next two cruise seasons.

It is surprising that only a few months after it's own Independent Review found that guaranteed shared access would adversely impact on naval operations the government has chosen to permit such access.

Is the approach taken by the government in relation to Garden Island an indicator of how it will handle the forthcoming Defence White Paper? Will commercial or financial considerations override the requirements of Defence's long-term security task? It is notable that the announcement bringing forward the Defence White Paper to 2013 was made by the Prime

Minister and the Defence Minister at the same time as they announced a number of cuts and deferrals to defence programmes and a significant reduction in forecast defence expenditure.

So far as Garden Island is concerned the Prime Minister's access announcement must be viewed as the thin edge of the wedge. The reaction of the tourism and cruising industries to the Prime Minister's announcement was to welcome it – and ask for more.

The New South Wales Premier supported the industry view. So too did the Sydney Lord Mayor. The Mayor was quoted as saying that while national security was important a continued naval presence on Garden Island could be balanced with access for tourists and residents.

The long-term portents for Garden Island are not promising. However, it will take time and a lot of money to re-establish Fleet Base East away from Garden Island. To judge from the recent access announcement it may be that the government is prepared to settle for retaining Navy at Garden Island but with a reduced operational capability.

It is to be hoped that whatever happens the Royal Australian Navy Heritage Centre will be allowed to stay on the Island. After all, the tourists might like that.

## COMMANDER GEOFFREY EVANS OBE VRD RANR (RTD), 1922 – 2012

It is with deep regret that The Navy reports the passing of its dear friend and supporter Geoff Evans.

Geoff, who died on 21st June, gave many years of service to the Royal Australian Navy and the Navy League of Australia.

During his long life Geoff Evans was a businessman, ADC and then private secretary to the Governor of Victoria, a member of the Press Council. For readers of this magazine it is for his contribution to maritime affairs in the RAN, the RANR and the Navy League of Australia that he will be particularly remembered.

Geoff Evans Joined the Navy as a sailor in 1941. He served in HMA ships MANOORA and WARRAMUNGA. He was promoted Sub Lieutenant and later Lieutenant. Geoffrey ended his fulltime service in 1947 but joined the RAN Reserve immediately it was re-activated after the war. He retired in the rank of Commander in 1982.

In 1950 Geoff Evans and others established the Navy League of Australia out of what had previously been a branch of the UK Navy League. Thereafter Geoff Evans was very much involved in the Australian Sea Cadet Corps (at that time an entity of the Navy League) He was senior Sea Cadet officer in Victoria from 1953 to 1975.

Geoff Evans was President of the Victorian Division of the League from 1967 to 1973 and Federal President from 1972 to 1994. He continued as Chairman of the League's Advisory Council for some years after 1994, until that body was re-constituted.

Geoff Evans was for many years actively involved in the discussion of maritime issues, both within the context of the Navy League and more broadly. His wide range of contacts, in Australia and overseas, were of great value to the League. He was an excellent writer and until recent years a regular contributor to The Navy magazine.

Geoff Evans made a notable contribution to the Navy League of Australia. In 1982 he was awarded an OBE in recognition of his service to the League.





## 01 AUSTRALIA AND SPAIN TO SHARE TANKER

The Spanish Navy (Armada Española) fleet tanker SPS CANTABRIA is to spend eight months with the RAN under a co-operation agreement signed in Madrid on 3 July.

The underway replenishment ship will deploy with the RAN for most of 2013, providing a back-up capability while HMAS SUCCESS undergoes a routine docking period.

The deployment will allow RAN personnel to train on systems shared by CANTABRIA and two of their future platforms: the Hobart-class destroyers and Canberra-class amphibious assault ships.

It will also help Australian defence officials evaluate the 174 m-long, 19,800 tonne double-hulled tanker design as a possible long-term replacement for SUCCESS and the RAN's other in-service fleet tanker, HMAS SIRIUS under project SEA 1654.

CANTABRIA (A15) will participate in exercises with RAN vessels between February and November next year, although it will remain under Spanish command. The deployment will be the longest and most extensive yet undertaken by the tanker, which was launched by Navantia in 2008 and commissioned in July 2010.

The Armada's chief of staff, Admiral Manuel Rebollo Garcia, said the deployment was a "clear example of pooling and sharing" of resources in the current financial crisis. The accord permitted "any type of ship" to be considered for a similar tasking, he added.

CANTABRIA shares various systems with the Armada's Alvaro de Bazán-class air warfare frigates and the landing helicopter dock (LHD) assault ship SPS JUAN CARLOS I ,

whose designs form the basis for the RAN's in-built Hobart and Canberra classes.

The RAN is looking to replace the 46,755 tonne SIRIUS (which was commissioned in 2006) and the 18,220 tonne Durance-class tanker SUCCESS (commissioned in 1986) with a single design to enter service "towards the end of this decade", according to Chief of Navy Vice Admiral Ray Griggs.

While the CANTABRIA deployment offers a chance to evaluate at first hand a possible replacement, "we will be discussing with other potential suppliers similar types of arrangement," Vice Adm Griggs said.

## THREE TYPE 209/1400 FOR INDONESIA

A contract has been signed between the Indonesian Navy (TNI-AL) and South Korea's Daewoo Shipbuilding and Marine Engineering (DSME) for the construction of three Type 209/1400 class submarines. This follows the 23 December 2011 announcement that DSME had won the competition and bested the French, German, Turkish and Russian competitors for the programme. One of the keys to the win was the technology transfer agreements that will allow Indonesia to develop its submarine building capabilities at PAL Shipbuilding.

The Type 209/1400 is essentially a lengthened version of the Chang Bogo class and is 61.2m (200.7ft) in length displacing 1,586 tons submerged and manned by a crew of 40. It has a top speed of 22 knots submerged and 11 knots surfaced or snorkeling.

The estimated US\$1.1B contract (US\$367M per submarine) marks the beginning of the construction phase of the programme with

the first unit to be entirely built in South Korea. Follow-on units will be built, unit two as a shared construction between DSME and Indonesia's PAL Shipyard and unit three, entirely built in Indonesia.

The first unit will begin construction immediately and should commission by 2017. Unit two, shared between DSME and PAL, will begin construction by mid-2013 and will likely commission in late 2017. The third and final unit, being built entirely at PAL will likely begin construction in 2013 and commission in 2018.

The construction of the third Type 209 will give Indonesia the experience to build additional units if it desires or move forward with other submarine designs. Additionally, the TNI-AL will be able to better maintain its submarine force in the future with less outside assistance.

## RN RECEIVES PENULTIMATE TYPE 45 DESTROYER

The fifth Type 45 Daring-class anti-air warfare destroyer was officially handed over to the RN by BAE Systems Maritime - Naval Ships during a ceremony at the ship's new homeport of Portsmouth on 25 July.

Laid down in July 2006 and launched in October 2009, the 7,450-tonne DEFENDER joins sister ships DARING, DAUNTLESS, DIAMOND and DRAGON in the fleet.

The five ships were assembled and integrated by BAE Systems at its Clyde shipyard facilities in Glasgow, consolidating modules built on the Clyde and at the company's Portsmouth facility.

DEFENDER and its crew will now embark on a final period of trials in partnership with

**01** The Spanish Navy (Armada Española) fleet tanker SPS CANTABRIA. SPS CANTABRIA is to spend eight months with the RAN providing a back-up capability while HMAS SUCCESS undergoes a routine docking period.

**02** An Iranian Fateh-110 tactical ballistic missile being test launched.



BAE Systems in preparation for the vessel's maiden deployment when it enters service in 2013.

Meanwhile, the shipbuilder is on track to deliver the sixth and final vessel in 2013. DUNCAN will head to sea for the first time in August to begin first-stage sea trials of the platform's speed, manoeuvrability, power and propulsion. Second stage sea trials will take place just a few months later, BAE Systems said.

Since the beginning of 2012, the first three ships of this class have all been variously engaged in maiden deployments: DARING completed its first international operations in the Middle East in June, having served east of Suez since January. DARING was replaced by DIAMOND, which set sail for its first operational deployment on 13 June. Meanwhile, DAUNTLESS departed in early April to the South Atlantic for its seven-month 'Auriga 12' deployment.

## 02 IRAN TESTS ANTI-SHIP BALLISTIC MISSILE

Iran has released imagery of a second test of its Khalij Fars (Persian Gulf) anti-ship ballistic missile that confirms the missile uses an electro-optical/infrared (EO/IR) seeker, but there are still doubts that it is ready to be deployed.

The Khalij Fars was first unveiled in February 2011, when the Iranian media released imagery of a weapon that was clearly based on the Fateh-110 tactical ballistic missile. Officials claimed it was being mass produced and has a range of 300 km.

Iran also released at that time imagery purportedly showing the missile hitting a stationary ship, but the authenticity of some

of the imagery was questioned: Uzi Rubin, the former head of Israel's Missile Defence Organisation, said it had been doctored.

The latest test was purportedly carried out in early July and involved a Khalij Fars successfully hitting a moving floating platform. Iranian media organisations released imagery supposedly taken by the missile's EO/IR seeker as it homed in on the platform - and still images of the missile hitting the target.

However, Rubin remains sceptical, noting that the missile that was supposedly fired appeared to lack an optical window as well as the antenna needed for tests and that the target did not appear to be moving. "The evidence they released is not convincing," he said.

"If I was an Iranian trying to convince the world I can hit a moving ship I would release evidence... I remember when they fired the Sejil [long-range ballistic missile], they had the camera wander over the Sejil showing every nut, bolt and weld line in loving detail. Here they are stingy with the details."

Nevertheless, he said Iran was capable of developing an anti-ship ballistic missile, saying that electro-optical homing technology was becoming more available in the form of civilian software for locking television cameras on to objects. "It makes sense to use it as an anti-ship weapon as ships stand out very strongly against the background," he added.

He described the Khalij Fars as a potential "game changer" in a possible conflict in the Gulf as the missile would fly below the envelope of the SM-3 surface-to-air missile carried by US Aegis destroyers but above the Phalanx close-in weapon systems used to

destroy sea-skimming anti-ship missiles.

He said the need to update the missile on the location of its target would be its primary weakness. "The flight time could be four or five minutes, so the ship could have changed position quite considerably and [be] out of the seeker's field of view. So the missile will need some updating during the flight," he said.

"Mid-course guidance requires a UAV or an aircraft to be observing the target all the time and that is of course the weak link in the whole thing: if you shoot it down you destroy the link."

## 03 FIFTH FRIGATE WILL BE THE LAST

The Spanish government has ruled out the procurement of additional Alvaro de Bazán-class air warfare frigates, according to Chief of Defence Staff Admiral Fernando García Sánchez.

With delivery of the fifth Aegis weapon system-equipped ship imminent, senior naval officers have been arguing for years for the construction of at least one more example.

However, Adm García Sánchez confirmed that the latest frigate, CRISTÓBAL COLÓN (F105), would "fulfill requirements" in an interview published by the magazine *Atenea*. He also said that a software upgrade is "on the table" to bring the frigates to the same standard as the USN combatants tasked with defending Europe from ballistic missile attack. However, with the continuing restrictions on Spain's military spending, "at the moment the costs are not assumable."

03

The last F-100 class frigate, CRISTÓBAL COLÓN (F105), being towed for final fit out.







## NEW DETAILS OF RUSSIAN LHD

French naval shipbuilding, systems and services group DCNS has revealed details of the design modifications and customer-specified equipment to be embodied in two 22,000-tonne displacement Mistral-class LHDs on order for the Russian Federation Navy.

Following on from a Franco-Russian government-to-government agreement signed in January 2011, DCNS in June 2011 signed a contract with Russian defence export agency Rosoboronexport for two Mistral-type ships. DCNS is prime contractor for the Russian BPC programme, and is also taking responsibility for the integration of the ship's operations management and communications systems; STX France is building the vessels under subcontract to DCNS.

According to DCNS, the design modification package required to adapt the BPC baseline to the Russian Federation Navy's specific requirements is now at a high level of maturity. A first phase of work concluded in April with the completion of the preliminary design review. Detailed design studies were launched immediately afterwards, with this second phase of activity scheduled for completion in September.

Russia's requirements include modifying the BPC design to accommodate Kamov Ka-29K and Ka-52K helicopters. The vessels are also being modified to operate in Arctic conditions, with higher electrical power available to de-ice part of the flight deck. All the user interfaces and onboard signage need to be translated into Russian.

In addition, a range of Russian command and communications equipment will be installed

on board. For example, the communications suite will integrate Russian and French equipment (some installed in Saint-Nazaire, some added post-delivery) and a Russian-supplied combat management system will be installed during build in Saint-Nazaire. However, it has been confirmed that the main surveillance radar will be the Thales MRR-3D-NG G-band system already fitted to the three Mistral-class vessels in French service. Images released by DCNS of the revised LHD configuration for Russia also reveal details of the ships' self-defence armament. AK-306 30mm gun mounts are fitted in recesses forward to starboard, and aft to port; while 3M47 Ghibka turrets (designed to fire Igla missiles) are positioned forward to port, and aft to starboard.

Weapon systems will be fitted in Russia post-delivery, although pre-installation work (such as seatings and cable routes) will be undertaken during build in France.

While the design modifications are being finalised, construction of hull blocks for the first of Russia's two LHDs has begun at the STX France shipyard in Saint Nazaire. The first 100-tonne hull block will be delivered in September and laid down in early 2013, marking the start of block assembly in the building dock.

VLADIVOSTOK is scheduled for delivery in 2014. The second vessel, allocated the name SEVASTOPOL, will be delivered in 2015.

## 04 VIKRAMADITYA SAILS

India's modified Kiev-class aircraft carrier VIKRAMADITYA (ex-ADMIRAL GORSHKOV) left the Russian port of Severodvinsk on 8 June for its first sea trials since a major refit, shipyard Sevmash said in

a statement.

A Russian Navy crew will conduct a series of tests on the 44,750-ton VIKRAMADITYA in the White Sea before moving to the Barents Sea for carrier aircraft training, the statement added. The trials, which will last 124 days, will also involve staff from Sevmash and Nevsky Design Bureau and be observed by a team from the Indian Navy (IN).

"This is an important event not only for Sevmash, but for the whole of Russian industry," Sevmash chief executive Andrew Dyachkov said. "I must admit there were many doubts, but working with the Indian Navy, with the designer, with a counterpart has allowed organizations to prepare the ship for its first voyage."

VIKRAMADITYA is the last of four Project 1143.4 aircraft carriers built for the Soviet Navy. It was first offered for sale to India by Russia in 1994 and by 1999 had been offered to India for free as long as it paid for the refit. A contract was eventually signed in January 2004 for a five-year refit at an estimated cost of US\$625 million but in August 2007 it was announced that the refit had been delayed by three years and that the ship would not enter service until 2012. In March 2010 India's Cabinet Committee on Security signed off on a revised US\$2.34 billion deal for the ship.

The modernisation undertaken includes new propulsion, power and air conditioning systems. The original Russian weapons systems have been removed and the flight deck has been converted to a short takeoff but arrested recovery (STOBAR) configuration with a 198 m angled deck featuring three arrestor wires. Sevmash said the ship will be handed over to India in December.

**04** India's modified Kiev-class aircraft carrier VIKRAMADITYA (ex-ADMIRAL GORSHKOV) on sea trials.

**05** The Italian navy frigate Maestrale. The Philippine Navy (PN) has agreed to purchase two of the decommissioning Maestrale class frigates from the Italian Navy. (USN)





The IN will operate 16 Mikoyan MiG-29KuB 'Fulcrum' fighters - 12 single-seat and four twin-seat variants - from VIKRAMADITYA. The service has also previously announced plans to operate a navalised version of the Tejas' light combat aircraft onboard the 40,640-ton (standard displacement) Indigenous Aircraft Carrier VIKRANT under construction at Kochi in southern India.

## 05 PHILIPPINES NAVY BOOST

The Philippine Navy (PN) has agreed to purchase two former Italian Navy Maestrale class frigates. The two frigates are estimated to cost around US\$140M per unit (includes overhaul and weapons upgrade). A contract is expected to be completed in January 2013.

The two Maestrale class frigates have just begun decommissioning from the Italian Navy and are expected to be transferred with weapons aboard giving the PN its first true anti-air (AAW), anti-surface (ASuW) and anti-submarine warfare (ASW) capability.

The frigates will be refurbished prior to transfer with hull, mechanical and electrical (H,M&E) work being completed as well as sensor and weapon upgrades (probably software).

The first frigate will be turned over in 2013 and the second in 2014. Italy will provide training and technical support during the transit to the Philippines as the PN has never operated a multi-mission platform of this sophistication and size.

## 06 ARK ROYAL SOLD FOR SCRAP

Aircraft carrier HMS ARK ROYAL is being sold for £3m for scrap metal by the

Ministry of Defence to help tackle a multi-billion pound defence deficit. The removal of the Royal Navy's former flagship from service in 2011, five years early, was a "difficult but necessary decision", the MoD has said.

The removal takes place five years ahead of schedule; leaves the UK with no fixed wing air carriers

Its sale follows bids to turn the ship into a London heliport, a dive site off Devon or other facilities overseas. An announcement on its future will be made in Parliament. More details about the deal are expected to be released during that announcement.

The MoD said the "new, much larger" Queen Elizabeth aircraft carriers would start to enter service in 2017.

Sister ship HMS INVINCIBLE was also sold for scrap last year to a Turkish scrap metal firm.

The ARK ROYAL - which was in service for 25 years - was put up for sale on the Ministry of Defence's edisposals.com website, which sells off kit to raise money to equip the armed forces with everything from aircraft to clothing.

The ship, which led the UK's naval forces during the invasion of Iraq, is the fifth vessel to carry the name - the first saw battle in 1588 against the Spanish Armada.

The decision to bring forward its decommissioning was criticised because it leaves the Navy without the capacity to launch fixed-wing aircraft until replacements are brought in.

But the MoD said last year that it had access to "a range of international bases which allow us to project our air power around the world".

The ARK ROYAL has been docked at

Portsmouth Naval Base since it was decommissioned. One of the unsuccessful proposals had been to strip and sink the carrier for a diving site, put forward by Torbay-based dive group Wreck the World.

## RAN EXPLORES ALTERNATIVE FUELS WITH USN

The RAN has signed an agreement with the USN to explore the increased use of environmentally friendly fuels.

Australia's Chief of Navy, Vice Admiral Ray Griggs, AO, CSC, RAN and the US Secretary for Navy, Ray Mabus, have signed a Statement of Cooperation which recognises the potentially significant benefits research into alternative fuels can bring. It acknowledges the importance of the project, both for the environment and for national security.

The RAN's Fleet Commander, Rear Admiral Tim Barrett, AM, CSC, RAN delivered the Statement of Cooperation for the signing ceremony on board the US aircraft carrier USS NIMITZ with Secretary Mabus on 19 July.

Rear Admiral Barrett said the project had enormous potential.

"All of us have a responsibility to be more environmentally aware. As things stand today, biofuel remains too costly to use across our fleet. However, this project could lead to a cheaper alternative fuel," he said.

The USN is moving towards the general use of a 50/50 blended biofuel product by 2020.

The RAN will observe the USN as it further develops the use of alternative fuels in time for a joint deployment in 2016. The 'Great Green Fleet' initiative aims to replicate the famous 'Great White Fleet' deployment when

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The former RN Aircraft carrier HMS ARK ROYAL at Portsmouth Naval base. She has been sold for £3m for scrap metal by the Ministry of Defence to help tackle a multi-billion pound defence deficit. (Mark Schweikert)





US ships circumnavigated the globe in 1907. "We are making sure that we look to the future so that we can continue to operate with the US as we do in company around the world," Rear Admiral Barrett said.

As part of the event, a RAN Seahawk helicopter landed on USS NIMITZ and refuelled with a biofuel blend, before flying the Fleet Commander to HMAS DARWIN. This is the first time a RAN aircraft has flown with a biofuel blend.

## HARPOON BLOCK II+ UPGRADE PLAN

Details of a previously unpublicised upgrade for the USN's inventory of Boeing AGM-84 Harpoon air-launched anti-ship missiles have been disclosed by Naval Air Systems Command (NAVAIR).

Known as Harpoon Block II+, it has been developed by an integrated product team (IPT) in NAVAIR's Precision Strike Weapons programme office (PMA-201) to bridge a capability gap between the legacy missile and the needs of the front-line community.

The upgrade will increase target selectivity, accuracy, reliability and survivability of the AGM-84 missile, which is currently cleared for deployment with the navy's F/A-18 Hornet and Super Hornet strike fighters and P-3C Orion maritime patrol aircraft.

At the same time, according to NAVAIR, the adoption of an innovative recapitalisation process means that the programme can be delivered without expending appropriated funds.

Harpoon Block II+ provides a rapid-capability enhancement for the navy that includes a new GPS guidance kit; reliability and survivability of the weapon; a new datalink interface that enables in-flight updates; improved target selectivity; an abort option and enhanced resistance to electronic countermeasures.

The IPT estimates that, if pursued with a conventional acquisition strategy, the Block II+ programme would cost approximately US\$140 million. Instead, the programme is to be funded through a sales exchange agreement with Boeing that provides a trade-in value for government-owned missile parts in exchange for the parts needed to upgrade missiles to the new configuration.

## INDIA TO FIT HARPOONS TO SUBS

The Indian Navy (IN) is planning to equip its four Shishumar-class (Type 209/1500) diesel-electric submarines with tube-launched Harpoon surface-to-surface missiles.

The eight 533 mm tubes in each of the German-built boats are currently equipped to fire AEG SUT Mod 1 heavyweight torpedoes

with a range of about 15nm. Navy officials said the Harpoon's 150 km range would "substantially" enhance the Type 209s' operational capabilities at a time when the submarine fleet is fast depleting. The number of submarines in IN service is expected to decrease from 14 to nine by 2013-14.

Since 2009 India has spent an estimated US\$370 million on 45 Harpoon Block II over-the-horizon missiles under two separate contracts via the US Foreign Military Sales programme: 21 missiles for its eight Boeing P-8I Neptune maritime patrol aircraft and 24 for Sepecat Jaguar IM combat aircraft operated by the Indian Air Force.

## UK DROPS CEC PLAN

The UK Ministry of Defence (MoD) has dropped a GBP500 million (US\$797 million) plan to acquire the USN's Cooperative Engagement Capability (CEC) for integration into the Royal Navy's (RN's) Type 45 destroyers and future Type 26 frigates.

The decision, taken as part of the MoD's PR12 budget planning round, comes after 12 years of study, integration and demonstration activity addressing the planned integration of UK CEC into various RN surface ships. Around GBP45.5 million has been spent on the programme to date.

As well as being held up as a keystone of maritime networked-enabled capability and an enabler for high-level interoperability with US naval forces, the attributes of UK CEC as a 'force multiplier' were also used to justify reductions in RN frigate/destroyer numbers. However, budget pressures saw the programme repeatedly deferred, with PR12 heralding its demise.

CEC is a real-time networked sensor data fusion system that builds a single track from radar plots supplied by CEC-enabled ships. Co-operating units thereby share composite tracks and a single consistent air picture with engagement quality track accuracy and combat identification.

The technology was identified by the UK as a means to address shortfalls in ships' ability to detect, monitor and counter anti-air threats, as well as reducing the widening gap in maritime interoperability with the USN. A memorandum of understanding with the US government was signed in June 2000 enabling the UK to gain access to CEC technology, and participate in the US CEC programme via a Foreign Military Sales case.

The UK CEC programme was originally aimed at equipping a number of Type 23 frigates with CEC from around 2008, and Type 45 destroyers to follow. However, PR11 changed the Type 23 platform fit to the replacement Type 26 frigate.

In January 2012, Minister for Defence Equipment, Support and Technology Peter Luff told parliament that the MoD's planning assumption was that UK CEC would be fitted in Type 45 destroyers and, in due course, the new Type 26 Global Combat Ship. "However, the decision on the ship fit plan will not be taken until the project achieves main gate approval," he said. "This is currently planned for mid-2012. If approved, it is anticipated that CEC will be installed on to Type 45s from 2018." ■



**THE  
DEFENCE  
WHITE PAPER  
2013  
(MARITIME)**

# MINISTERIAL FORWARD

*Every Defence White Paper has a 'Forward' section written by the Minister. CDRE Jim Dickson, RAN (Retd) provides such a piece entitled Towards a New White Paper*

The death of the 2009 White Paper (from a stroke) can be viewed as either a disaster or an opportunity. A disaster because it puts paid to plans and projects assessed as necessary to meet the perceived strategic requirements for 2030: an opportunity because it presents us with the chance to re-consider those requirements. It is a decision made for purely economic reasons with little regard to military or strategic needs.

Like most of its predecessors over the past four decades the 2009 White Paper was a document founded on hope rather than reality. Mining boom or no mining boom, the projections of the money which would be made available over the next two decades were unduly optimistic. Militarily – particularly in regard to the Navy – there was a sense of unrealism about the forecast of 12 submarines as well as the replacement of the surface fleet with modern technology vessels. The Paper was also perceived as provocative in regard to its treatment of China, paying little heed to the size and growing capability of that nations' maritime capability and inferring that we should structure our Navy to cope with the sort of threat that they could impose.

As Greg Sheridan has unapologetically pointed out in The Australian "It's time we stopped kidding ourselves". We "talk big", we grandstand about our capability and we pretend to the Australian people that we attach the highest priority to the defence of the nations' interests. For years in the second half of the 20th century politicians and strategic planners spoke and wrote of self-reliance as if it was a goal within our reach. Given the failure to attain the limited targets we have set ourselves over recent decades we are probably as far, if not farther, from achieving self-reliance today than we were in 1975.

The government has stated its intention to produce a new White Paper in 2013. It is to be hoped that it will be put together by a new, fresh, visionary team of strategic planners who will be guided by what they see ahead rather than in the rear vision mirror. It would be encouraging to see them start with a blank sheet, face up to important realities confronting Australians and Australian governments, determine what platforms, weapon systems personnel, support and infrastructure we need, and then consider how we get there from where we are today.

The realities they must consider include the following:

- Australians are generally complacent about defence. They expect the government of the day to do what is necessary to safeguard the nations' interests but they only get aroused when the balloon goes up. As a generalisation they believe that our situation at the bottom right-hand corner of the world gives us a degree of security because of its remoteness and that any potential aggressor face huge immense logistic problems were he to try to establish a foot-hold on our shores.
- Principally because of this complacency governments are reluctant to budget for defence spending at the necessary level. They proclaim support for the needs identified in White Papers and Strategic Reviews

but when it comes to budget allocation they consistently underspend. There are more votes in education, health and social services as well as in major infrastructure developments in this vast, rich land with its quickly increasing population.

- Despite its riches and potential Australia has a minute population for its size. With a coastline of 36,000 kms and a land mass similar in size to the USA, the task of building, operating and maintaining a self-reliant Defence force is beyond the realistic capability of a population of 23 million. It is a goal towards which we can and should be gradually progressing; at present we are not.

- Because of the foregoing we have to rely on others to come to our assistance if our national interests are seriously threatened. In the last half century we have looked increasingly to the USA to afford us the help and protection we need. It suits the convenience of both countries that this be the case but the reality is that if we wish to remain masters of our own destiny we must move steadily away from this posture which at times looks like subservience. We can be confident that the USA will assist us if it is in THEIR interest to do so: unless we subordinate ourselves to the extent that we become the 51st State we cannot rely on such help otherwise.

- The technological explosion of the past two decades has led to a situation which puts a new perspective on what we mean by obsolescence. The shelf life of all high-tech equipment is reducing at a rate the world has never previously experienced. This is a reality which makes it impossible to predict future requirements with accuracy or even confidence. It is a factor which should discourage commitment to vast, long-term expenditure on weapons, equipment and military platforms. The 'replace vice repair' philosophy which has dramatically changed domestic attitudes is a reality which cannot be ignored by Defence planners.

In addition to these realities there are numerous other factors which the architects of the new document must consider. Of high importance among these is whether or not Australia will make moves towards the development of a nuclear infrastructure in the foreseeable future. This politically vexed question is being deliberately avoided at present (and this is understandable in the wake of the 2011 Fukushima disaster) but in a world of ever-increasing high energy demand the option cannot continue to be ignored indefinitely. Much is being written to suggest that nuclear is fast becoming the safest, cleanest, most cost-effective way to meet energy demand and Australia, with its riches of uranium ore and vast land mass, is better placed than most to exploit the possibilities it offers. There is no valid reason why we could not develop a nuclear infrastructure for peaceful purposes while remaining implacably opposed to nuclear weapons.

Notwithstanding elements of the recent 'Arab Spring' and the civil war now being fought in Syria, there is a trend away from the 20th century type of conflict which resulted in human carnage on a grand



scale and the sacrifice and destruction of so many lives. Improved international communication is slowly leading to better understanding and better ways of dealing with the issues which divide nations and gave rise to conflict in the past; it is not unreasonable to expect that this encouraging development will continue. Means other than resort to military intervention are increasingly being used to settle disputes between nations. We will never totally eliminate disputes engendered by differences in ethnicity, race, religion, affluence, resource availability, territorial boundaries (and other causes) any more than we can eliminate ructions within a family – but we are more conscious than earlier generations of the need to avoid the senseless waste of human life which becomes inevitable when human beings are directed to confront each other with lethal weapons at their call.

A vital consideration in the construction of the 2013 White Paper is that it has bipartisan support. Given the cost, lead-time, infrastructure, training and logistic support requirements of modern weapons platforms and equipment, it is essential that this be the case. Defence policy and what is needed by way of hardware, software, infrastructure, personnel and training to put that policy into effect are not matters about which the nation can afford to have the main parties differing.

If the 2013 White Paper is to be an effective blueprint for the way ahead those writing it must consult widely and take account, inter

alia, of the factors addressed above. If the necessity for haste in bringing it forward takes priority over more important considerations, we will again be presented with a White Paper more influenced by the short-term political needs of the government of the day rather than the nations' long-term interests. ■

The USN nuclear powered Virginia class submarine NEW MEXICO on sea trials. Much is being written to suggest that nuclear energy is fast becoming the safest, cleanest, most cost-effective way to meet energy demand. There is no valid reason why Government could not co-develop a nuclear infrastructure for domestic and national security purposes to support a fleet of SSNs while remaining implacably opposed to nuclear weapons. (USN)



# THE STRATEGIC ENVIRONMENT

By Dr Norman Friedman\*

*All Defence White Papers articulate the state of the strategic environment. They also need to take into account the implications to the security and stability of the region that could be impacted by trends in military equipment purchases and actions of regional governments. In his article, A SAFER NEIGHBOURHOOD?, Dr Norman Friedman concentrates on the rise of Chinese naval power and its strategic implications for Australia.*

The 2009 Australian White Paper on Defence justified a considerable build-up on the basis of a worsening situation in the area near Australia. What has changed since then? Is the neighbourhood becoming safer, or is it becoming more dangerous? Probably the two main positive developments have been the proclaimed US pivot towards Asia and a long-overdue expansion of the RAN surface force, in the form of the three Aegis destroyers and two large amphibious ships. The RAAF is buying new fighters, first the interim F/A-18E/F and then the Joint Strike Fighter, but all of these aircraft are more or less tied to Australian territory. They cannot provide the fleet, or any expeditionary force it transports, with continuous air striking or defensive power. There have also been army upgrades, some of them making it easier for the army to interoperate with U.S. forces. To the extent that future Western Pacific operations are more likely to be maritime than ground-based, it can be argued that the RAN represents the main Australian contribution to the alliance with the United States. The strengthening of that alliance in turn is the most important positive development since 2009.

The US pivot entails a larger carrier presence in the Western Pacific. Unfortunately the Australian government has recently rejected a US proposal to base carriers in Western Australia. If basing problems ultimately make the pivot difficult to execute, then Australia will certainly be among the losers. The neighborhood will definitely not become safer in this regard.

Other developments are much less positive. The largest local sea power, China, is expanding her fleet. More importantly, over the past few years senior Chinese naval officers have begun to make the case for an oceanic rather than an expanded coastal fleet, quoting Mahan extensively. Their most interesting argument is that China now depends on oceanic trade – including trade with Australia – for vital raw materials and for energy. Mahan always saw oceanic trade as the key argument for seapower. In the Chinese context, trade and prosperity are vital because the Chinese Communist Party justifies its rule largely on the basis that it guarantees Chinese prosperity. The other main justification is Chinese nationalism, the guarantee

China's first aircraft carrier SHI LANG (ex VARYAG). SHI LANG's recent completion of sea trials can be read as the beginning of a Chinese naval shift towards oceanic warfare far from its shores.







A Tu-22 Backfire bomber with an AS-4 anti-ship missile under each wing. The Chinese now have a production licence from the Russians for the Tu-22M3 'Backfire,' their most potent Cold War anti-carrier weapon. Its use is predominantly for maritime strike. Its long range and high speed will make it difficult for a fleet without organic air power. Its AS-4 anti-ship missiles are also potent and difficult to shoot down due to their supersonic speed (the Russian's have also made them smarter since the Cold War).

that the hated foreigners will never again humiliate the country. The ideological argument largely collapsed in the wake of the Cultural Revolution and then of Tien-an-Men Square in 1989. The shadow of the Cultural Revolution is so long that a key argument against Bo Xilang, the recently disgraced Party chief of Chongqing, was that he was 'too red' – that he showed too much interest in reviving the Cultural Revolution.

What does all this mean for Australia and for the region? The current PLAN (Peoples Liberation Army – Navy) argument is powerful because it associates an oceanic navy with a principle prop of Chinese Communist political power. That does not mean that the civilian leadership, either the current one or the one about to enter office, necessarily buys the navy's position. An Australian should be interested in the outcome of this argument because the only Chinese armed forces likely to affect Australia directly are an oceanic fleet and the Chinese ballistic missile force, and the latter is likely tied up with the more urgent missions of deterring the United States and Russia.

The PLAN is making the argument in an attempt to break out of its current primary mission, which is to extend coast defence and then sea denial out to sea, the different stages of its mission being indicated in Chinese writing by different 'island chains.' No such force can do much to protect China-bound tankers passing through the Indian Ocean. If, as many have supposed, the great struggle of the twenty-first century will be between the two Asian superpowers of India and China, that oil lifeline provides the Indians with an enormously attractive pressure point. The Indians are building up their own fleet, arguing that the Chinese are intruding into the Indian Ocean and must

be held down. A Chinese reader could be forgiven for reading such claims as a lightly veiled threat.

Why should an Australian care about forces which may be most relevant thousands of miles to the west? The reason is simple. Ships move where their masters decide. An oceanic Chinese fleet might be justified to the Chinese government as a means of dealing with an Indian threat, but there is no stamp on the ships which prohibits them from operating in the South Pacific. Pressure which might be created to deal with India can certainly be applied to Australia.

Recent developments can be read as the beginning of a Chinese naval shift towards oceanic warfare. The most spectacular is the completion and sea trials (including touch-and-go air operations) of the ex-Russian carrier VARYAG. Two more carriers are reportedly being built, and the Chinese created a spectacular system integration building shaped like the flight deck and island of a carrier. The carrier has reportedly been renamed SHI LANG, after the Chinese admiral who conquered Taiwan.

The Chinese have also extracted a production licence from the Russians for the Tu-22M3 'Backfire,' their most potent Cold War anti-carrier weapon. Reportedly it is intended specifically for naval use. During the Cold War, the US Navy developed anti-Backfire tactics. It concluded that it was not nearly enough to shoot down the missiles the Backfires launched. Bombers could simply return to base, take on new missiles, and return to attack again, until the fleet's defences were exhausted. They had to be shot down, preferably beyond their own missile-firing range. The U.S. Navy called this the Outer Air Battle, the slogan being 'kill the archer, not the arrow.' There were,

after all, many fewer Backfires, with their specialist aircrew, than anti-carrier missiles. Without aircraft in direct and continuous support, an RAN force facing Backfire attack might well shoot down missiles, but it would have little or no chance of shooting down the bombers launching them. If, as seems likely, the Backfire deal includes the kind of missiles the Russians deployed during the Cold War, the bombers will be able to fire from beyond the radar horizon of the target force. That of course assumes a considerable degree of ocean surveillance, but the Chinese are apparently working in that direction.

Do the carrier and the Backfires necessarily mean that the Chinese leadership has bought Mahan's arguments, and that the country is poised for global seapower? We can't know – what we do know is that the Chinese are acquiring the potential for a major pivot of their own. Right now, China seems rich enough to modernise all three of its services, allowing each (to some extent) its head. Remember that the Mahanist arguments were published by Chinese naval officers, not by high-ranking members of the Chinese government. The 'island chain' arguments, which are not particularly realistic, still get considerable press. The navy view may be that any argument justifying continued development is acceptable, that what counts is that the government is underwriting the hardware which may be wanted in ten or twenty years.

We do know that both the carrier and the bombers were long-term projects. We now know that the Chinese took considerable pains to acquire the carrier – and that it was in better condition when acquired than most imagined. What looked on satellite images like wholesale demolition at the builders' yard was actually the removal of Russian weapon systems. By the time the Chinese were buying, Ukraine was independent, and the Russian position may well have been that the

weapon systems were not exportable by Ukraine. Machinery remained on board, largely intact. We do not know whether the hull was looted of its valuable copper wiring, although that certainly happened elsewhere in the former Soviet Union.

Apparently we do know that, having bought the hull at scrap prices, the Chinese were prepared to pay heavily for the privilege of taking the carrier through the Turkish Straits, sending their Deputy Foreign Minister to negotiate with the Turks. Reportedly the price included a large tourist deal. The carrier deal was concealed by the claim that it was to become a floating casino in Macau, but the casino company was pretty clearly a sham. At the time, there were rumours that the carrier had been bought out of a war chest accumulated to support Chinese hegemony in the South China Sea – where Chinese land-based air power might not be effective.

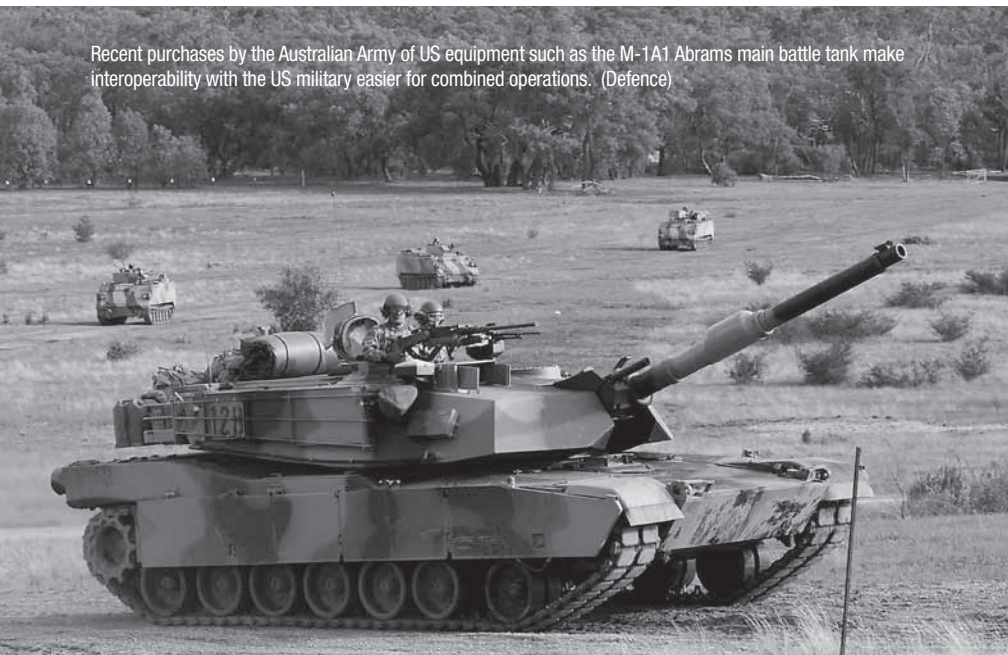
The carrier sat at Tsingtao for years before visible work began. We don't know whether that means the project was suspended, or whether it took years for internal – invisible – work to proceed. For example, if the carrier's copper wiring was looted while she lay suspended at Nikolaev, rewiring would have been a laborious process. Work may also have been delayed while the Chinese dickered with the Russians over the electronic systems they needed for the carrier, and perhaps also while the Chinese sought to develop steam catapults. In any case, the bottom line is that the carrier represents roughly a twenty-year project, from initial attempts at purchase to realisation. Thus it considerably antedates the current public naval interest in Mahan and global seapower. However, it takes a carrier to project naval power to great distances. In that sense this carrier, and others which may be building, represents an opportunity which cannot be welcome to Australians.

The USS ABRAHAM LINCOLN at sea. With their recent acquisitions and developments the Chinese are working hard to make the Western Pacific an uncomfortable place for US carriers (and ergo Australia's LHDs), which are vital for Australia's security. (USN)





Recent purchases by the Australian Army of US equipment such as the M-1A1 Abrams main battle tank make interoperability with the US military easier for combined operations. (Defence)



The Backfire program offers similar ambiguities. Approaches to the Russians reportedly began in 1998, but no agreement was signed until this year. Reportedly the Russians have repeatedly suspended sales agreements due to rampant Chinese copying of what they bought, examples being fighters and submarines. The Chinese have apparently been far less successful in developing modern high-powered jet engines. In the case of fighters, the Chinese reportedly managed to get engines via Israel, but Backfire-suitable engines are apparently more difficult to obtain from other sources. The deal with the Russians is apparently for two Russian-built pilot aircraft, to be followed by 32 built in China using Russian-supplied engines. No one has claimed that there is an associated missile deal, but a few years ago the Russians reported that they were restarting production of the AS-4 anti-ship missile carried by Backfires. If the Chinese aircraft have this missile, they have the potential to attack targets from beyond the horizon (the missile incorporates a data link back to the bomber, which can lock it on remotely after firing it). If not, then the Chinese gain reach but not that valuable over the horizon capacity (their best air launched anti-ship missile is currently the Russian rocket-ramjet AS-17). Again, the Backfire deal was first sought well before anyone was publishing Mahanian arguments in China, but it can certainly fit into such arguments.

In a larger sense, the Chinese are working to make the Western Pacific an uncomfortable place for US carriers, which are the main vehicles of improvement in the Australian security situation. There has been considerable talk of deploying US land-based aircraft to austere airfields in places like Indonesia, as a way of overcoming any pre-emptive Chinese attack, but such airfields lack supporting equipment and spares. It seems unlikely therefore that they can support sustained operations of any kind. Carriers are uniquely valuable because they are mobile and well-defended and provide complete support for aircraft – which in turn can operate on a sustained basis.

What counts is some measure of sustained carrier operations in the Western Pacific. How many carriers can stay there depends in part on how far they are from their bases. Not having a base in Western Australia might well be unfortunate in this regard. If the reason for denying the base is fear that the Chinese might use it as an excuse to attack Australia, that in turn would badly weaken the US alliance which seems rather valuable to Australia. Even if the denial of the

base does not weaken the political end of the alliance, it will reduce US ability to maintain the most powerful possible carrier force in the Western Pacific.

The Chinese clearly badly want to inhibit US carrier operations; they have, for example, been embarrassed when US carriers turned up to support Taiwan and thus to neutralise the pressure they were applying. The much-touted anti-carrier ballistic missile (DF-21D) clearly fits this category. It is often described as though it is operational, but it is not at all clear that the necessary targeting infrastructure exists – nor, for that matter, has it ever been fired at a moving seaborne target (let alone a realistic one). It is possible, for example, that the ballistic missile is actually part of an inter-service fight between the navy and the Chinese equivalent of the old Soviet strategic rocket force; in the early 1960s the Soviet navy successfully fought off an attempt

to replace Soviet Naval Aviation (anti-carrier Badgers) with land-based SS-11 missiles. That attempt seems to have been inspired not by the uniformed Strategic Rocket Forces, but by a particularly politically-adept missile designer, Chelomey, who had previously been responsible for an important ship-launched anti-ship missile (he was also responsible, initially, for the Soviet ocean reconnaissance satellites). The Chinese leadership has picked up DF-21D as a threat so spectacular that it hopes it can convince local politicians that the US Navy cannot come to their assistance in an emergency.

I have emphasised that it is the Chinese navy making oceanic seapower arguments because it the other Chinese services undoubtedly have their own arguments justifying increased spending. It seems likely that service demands have not yet reached the point at which the Chinese leadership has to choose who gains and who loses.

The Chinese army is a particularly delicate case. The Party relies on it for social control, and it seems clear, from affairs like that of the Falun Gong, that the Party is often rather nervous. Hundreds of thousands of disturbances every year, particularly in the less developed interior of China, testify to a restiveness the Party cannot welcome. Continuing intense efforts to censor the Chinese Internet are another evidence of Party nerves, justified or not.

The Party's use of the army for social control places it in a difficult position. Modern armies have down-sized dramatically because they cannot afford large numbers of fully-equipped troops. There was a time when army manpower was cheap; all it took was a pack, a uniform, and a rifle. The more people in a country, the more troops could be raised. That created the mass Chinese army which fought in the Korean War. The situation is rather different when each soldier needs his own electronics and when the army is mechanized and equipped with missiles and other expensive weapons on a mass scale. No army has chosen to combine a numerous force of ill-equipped troops with a mechanized core (the closest approach might be something like the Iraqi combination of Republican Guard and regular army).

The Party's problem is that it needs large numbers in order to cover China and secure control. Only very recently have troops been moved from military district to military district, which would make it possible to maintain control with smaller numbers. However, if much of China is open to disturbances, moving troops around really does not help

very much. It might also be argued that creating a much more compact modern army would leave a small number of senior officers in position to displace Party rule entirely – a problem dictatorships well understand.

Combining large numbers with modern equipment was barely possible in the old Soviet Union, but only because the Soviet economy was so heavily tilted towards military production – at the cost of personal goods, hence any kind of visible prosperity. Since the Party now justifies its rule largely in terms of economic growth visible to all, the Soviet path is barred. At some not very distant point the Party will have to decide whether naval growth can be sustained, given the demands of the army.

For its part, the army will be able to argue against the Navy's chief argument about trade protection. The resources which currently come mainly by sea are also available in Siberia. The army can (and probably does) argue that what motivates the Russians to be reliable suppliers is the reality that it can snatch those resources by force if need be. Moreover, the Chinese have long pointed out that the Russians (under the Czars) seized Siberia from the Chinese Empire; it is as much stolen territory as, in their minds, Hong Kong was. In the past, the Chinese made no attempt to recover Siberia because its ethnic Chinese inhabitants had been driven out (by the Russians). But now many Chinese live in Siberia. They may not really enjoy being ruled by Moscow. An American might remember another place, peopled largely by his countrymen, but ruled by others: Texas. In 1836 the Texans fought a war of independence from Mexico, and less than a decade later they joined the United States. Will we be seeing a Chinese replay of those events in Siberia?

What does this mean for Australia and for the future of Chinese sea power? Possibly the current push towards the oceans is a hot-house flower which will fade as the cost of the army rises. Possibly the Chinese navy will win its argument, and it will continue to expand – after all, it must be expensive to transport Siberian resources across

China so that they can be used (the sea is a lot less expensive). There is another, more unpleasant possibility, that the Chinese navy will encourage the Chinese government to act in such a way that it can prove its value. The most obvious venue is the South China Sea, where the Chinese are already acting aggressively, and where the stakes may well be quite high (there may be a great deal of oil and gas, and there is already a valuable fishery).

Would Chinese action in the South China Sea make Australia's neighbourhood, which is well to the East, more dangerous? It might well do so, even if indirectly. Chinese success in the South China Sea would require the other countries in the area, such as the Philippines and Vietnam, to accept a considerable degree of Chinese sovereignty. That would surely bar them from offering the United States naval facilities. Without such facilities, the Western Pacific would become considerably less hospitable. The lack of base facilities in Western Australia would become a more serious problem. Countries like Indonesia would probably feel far less motivated to allow the United States to use their airfields. The Chinese would find it a lot easier to apply pressure to an Australia with fewer regional friends. ■

\* The opinions expressed are the author's own, and are not necessarily those of the U.S. government or of any other organization with which he has been associated.

The Spanish F-100 SPS BLAS DE LEZO. The BLAS DE LEZO is almost identical to the RAN's new Hobart class air warfare destroyers. Chinese advances in the form of the new version of the Russian AS-4 anti-ship missile from long range supersonic Backfire bombers and DF-21 intermediate range anti-ship ballistic missiles may already be an over match for the Hobart class and its Aegis/SM-2 anti-air systems. (USN)





# THE DEFENCE ENTERPRISE

*A new way of doing business may be needed for Defence given shrinking budgets worldwide. Dr Jonathan Hemlock explores some of the possibilities of the future that a new Defence White Paper needs to address.*

The ravages of strategic effects and evidence basing upon the enterprise that was US, UK and AS Defence is increasingly clear to see. Having suffered strategic failure in part or in whole in Iraq and Afghanistan, there is a clear and pressing need to redesign the enterprise that was Defence – which is not ‘evident’ from the cuts now impacting the ADF, UK MoD and US Military. Cuts that will reduce UK and AS Defence spending to about 1.7% and 1.5% GDP, respectively, by 2015 and US Defence spending, in real terms, by 50% in 2021.

Would any of the military leaders in 2001-4 have knowingly agreed such a price beforehand? A price including the halving of fleets, dereliction of R&D, unprecedented de-industrialisation, scrapping of people, fleets, arms and regiments and the selling off / privatising / securitization of the military covenant; including health care provision. Are we any safer today than in 2001/3? Having set out the strategic context, this section of the Alternative White Paper deals with the Defence enterprise economy.

## EVIDENCE BASED DECLINE

Towards the end of the UK SDSR (Strategic defence & Security Review) when it was too late for any real change, the question of national interest was raised for the first and only time. By then it was too late. The SDSR was a cutting exercise based upon the demand for a 20% reduction in Defence spending: It was a ‘capability-needs-evidence’ approach; reducing main effort from proper empirical strategic thinking; research and design and focussing it on performance metrication. The end result was planning and process blight – based upon optimised, capability-based strategy rather than research, design and production. If the Armed Forces could not provide ‘evidence of a threat’ then the capability could not be justified. More brutally, as Professor Julian Lindley-French has noted ‘a navy without a strategy is no navy at all’.

## NOT SIMPLY TO FIGHT

At some point it is conjectured that the focus shifted from ‘thinking to fighting (thought to fort)’ with the emergence of a warrior caste

Specialised command ships such as the USS MOUNT WHITNEY (pictured) may make a comeback in future conflicts. (USN)





The new USN carrier borne X-47 stealth UCAS (Unmanned Combat Aerial System) at its recent launch. Systems such as this are the new way of waging war which the ADF will need to embrace, particularly on platforms such as the new LHDs. (USN)

focussed on tactics rather than strategy and 'operational art'. This fitted the reductionist consultant-accountancy and political models then being devised – for example, in the UK spending on R&D fell from 15-20% (+) of the Defence budget (recommended by NASA to prevent costly re-work) in the 1970/80s to less than 5% by 2010; with similar reductions in public service and military education as opposed to training.

The Prevent-Engage-Recover (P-E-R) model was implicitly referred to by the UK General Sir David Richards, Chief Defence Staff, in his letter to Army COs, dated 29 Oct 09: 'Prevention will be a key element of British foreign policy in the years ahead...whether we are training indigenous security forces... or merely reassuring our allies that we are

there to support them, we must be prepared to be deployed and engaged in prevention operations across the globe'. The P-E-R model (Figure 1) recognises work by (Gray, 1993) and (Luttwak, 2001) 'that placed emphasis on the importance of strategic culture in networked social processes and which underpin planning, decision-making and so decision-taking: good decisions are not capability driven'.

## FUTURE ENTERPRISE

The 2009 Defence White Paper was in many regards an exemplar; setting the strategic goals and aiming to shape the context through amphibious (the two LHDs and CHOULES) and maritime (submarine/Tomohawk) influence projection. From a military perspective, this

is about interest and influence; recognising that for the majority of the time an effective Armed Force will be occupying the prevent and recover roles and, if its interests are strategically aligned, only engaging when and where necessary. This is also the underpinning concept behind Asymmetric Offshore Counter Balancing (AOCB) – the de-facto post Afghanistan maritime-based policy being adopted by the US and UK.

An effective organisation capable of learning needs to occupy the strategic and co-adaptive competencies and to 'guard what it knows'. That same organisation needs to retain certain core knowledge (known-unknowns) – for example, designing, building and integrating ship systems – but can choose to transfer elements of its non-core business (known-knowns) to an external agency, for example running bases. By contracts, optimisation seeks management by metrication: 'if you can't measure it; you can't manage it'. This, in the UK, led to a failure of strategic leadership and the improper privatisation of core to non-core competencies, for example logistics and medical health care provision.

## STEP CHANGE

The underlying message of the US, UK and AS Defence Reviews is that current fleet designs (be they ships, aircraft, tanks or people) – exacerbated by Defence Cost Inflation (DCI), – are simply unaffordable and irreplaceable;. Moreover, these Fleets were constructed (in the US and UK) when Defence spending was at 5% of GDP and more. Quite simply, this is a time of evolutionary step change – neither incremental; nor spiral. We cannot afford to continue as we are and new designs are

Multi-role and modularity may be the best options for the ADF of the future. The Danish command and support ship ABSALON typifies the example with more firepower than an Anzac frigate and the ability to embark a command team and 200 troops with two medium helicopters and a large vehicle deck for all manner of light armoured vehicles. It's secondary roles include hospital ship and mine layer. (USN)





needed to break out of the DCI trap. Scale, in terms of number and size, is required if we are to restore resilience to our force structure – particularly in the contested littoral where many future battles will be fought. And this needs to be affordable. In other words we need to think (strategize) and design afresh, if we are to fight effectively and win.

A strategic assessment based upon the interests of Australia and what Australia wants its disciplined, commanded forces to do (e.g. P-E-R), would ask ‘what should the size of Australia’s Armed Forces be?’ Given a population of 20 Million, a reasonable suggestion would be about 85,000: 45,000 in the Army; 20,000 in the RAN and 20,000 in the RAAF; supported by an effective APS (the 4th Arm) of about 20,000. This is broadly the size of the Army (with Reserves) over the last decade but would mean growing the RAAF and RAN by between 17 and 25%, respectively. This would require a new model. A potential design may be the Federation militia model with an RAN consisting of 11,000 regulars; 4,500 Reserves and 4,500 Private Reserve (potentially an auxiliary service as in the RFA). The issue is that personnel designs need to change to enable the provision of worthwhile careers that will also align affordably with national, economic, security and industrial interests and strategies – which current models do not. These designs will also mean pump-priming Research; not simply in Defence but within academe, Government and industry.

The ships needed for this force will be different – they need to be able to take the hits, which means being able to sustain (not simply

survive) losses. This is not an attritional design – in fact quite the reverse. It recognises that designs to be affordable if they are to be used politically, militarily and economically: ‘affording to lose in order to use’. Who will be flying in the 21st Century; why and from what? It is probable that optionally piloted vessels (OPiV) will provide versatile modularity in the future. More specifically, where people are in the loop, they will be flying rotary wing or turbo-prop tactical lift and for EW and UCAV / UAV control. This requires very different deck types than have gone before – potentially much cheaper and along civil, even dual-use designs. This returns to the need for dedicated command and control ships or Network Command Vessels (NCVs) – as applicable in war as after a tsunami; as deployed in the Pacific during WWII and on D-Day. The combination of NCVs and OPiVs is likely to play a critical role in the Cyber- and be a significant entry level requirement for any coalition involving the US.

This is an evolutionary step change. To overcome DCI a refresh rate of 10 years is required – in other words selling on existing capabilities at the ten year (1/2 life) point and bringing on new designs, including for personnel contracts (the ten year medium-career commissions). This type of versatile, modular dual-use application would also allow for re-capitalisation at scale; aligning fiscally with a viable, affordable national industrial strategy. More significantly, given the tyranny of distance and the effects of recession in the US and the UK, this would give Australia a real opportunity to lead change: a position not dissimilar to that of the US at the beginning of the 21st Century. ■

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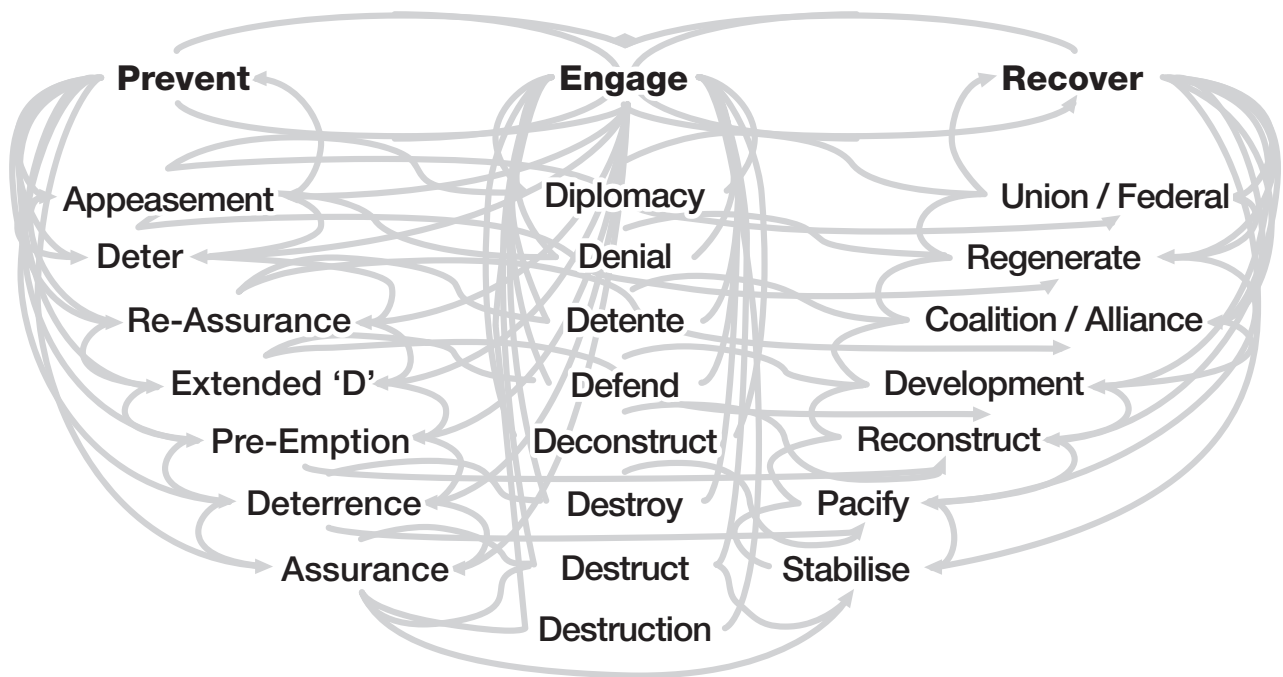
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**Figure 1:** The Rose Bowl

New Emergent Knowledge	Strategic Competence Unknown-Unknowns Andragogical	Co-Adaptive Competence Unknown-Knowns Andragogical
Old Established Knowledge	Non-Core Competence Known-Knowns Pedagogical	Core Competence Known-Unknowns Pedagogical
	Low Level of In-House Knowledge	High Level of In-House Knowledge

**Figure 2:** Organisational Knowledge Matrix after Milton and Rumsfeld



# CYBER/MARITIME SECURITY

*The new Defence White Paper needs to take notice of the fact that the maritime space is not just vital for trade but also forms the cyberspace so relied on for commerce and communications. Dr Jonathan Hemlock explains why protection of cyberspace starts in the maritime space.*

There is a perception that Cyber- as increasingly connected with what used to be referred to as Electronic Warfare (EW) is about space and that it is within space that Cyber- is dominant. This is not reflected in the current infrastructure in place and should be challenged. Despite sub-maritime cables costing several hundred million dollars to lay, as of 2006 the following facts apply:

- Overseas satellite links carried only 1% of international traffic, while the remainder was carried by sub-maritime cable .
- This percentage is unlikely to increase given the continued expansion of cables – for example the recently announced Italy-India mega-speed cable.
- The reliability of sub-maritime cables is high, especially when multiple paths are available in the event of a cable break.
- The total carrying capacity of sub-maritime cables is in the terabits per second while satellites typically offer only megabits per second with much higher latency.

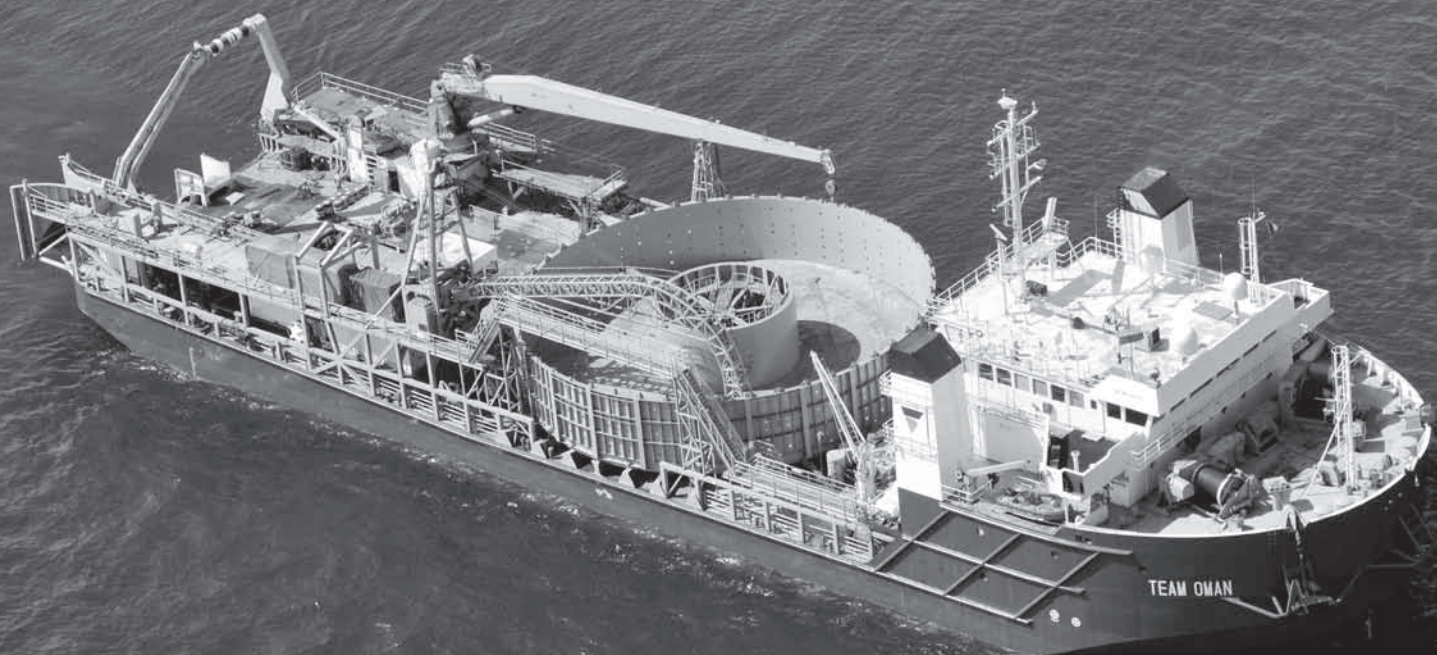
Cyber- actuality is terrestrial and only marginally space-based. In this respect, Cyber- is far more a part of the existing permissible, regulated maritime commons<sup>1</sup> than it is a part of the new, more prohibitive<sup>2</sup> space-preserves. Despite changes in designs and cable construction, the number of hi-speed transatlantic cables connecting the US to Australia remains in the low handful and there is no, repeat no, dedicated Southern Hemisphere cable connecting Latin America,

New Zealand, Australia, South and sub-Saharan Africa and Antarctica, with Atlantic, Pacific and Indian Ocean 'risers' to Europe (the UK – the Northern Hemisphere hub); the US and Canada, China, the Middle East, Japan and India. This has significant economic and security (sûreté) implications for Australia<sup>4</sup> and, potentially, huge opportunities also. The ALP's NBN (National Broadband Network), despite its nonsensical delivery, is the right idea for the right time – but, to be truly viable, it needs to 'go somewhere'. A Southern Hemisphere High Speed Cable (SH<sub>2</sub>C) also connects not simply to future economic growth but also to energy sûreté – and so to the unpopular carbon tax: again, right reasons; wrong delivery! In other words, proper strategic thinking combined with Keynesian and Hayekian investment in an SH<sub>2</sub>C, today, would: position Australia as the engine and hub for future global growth; underpin *local* energy, food, industrial and job security; create a vital leadership role in troubled times (so helping to lead global recovery); enable pacification (through belonging / being) and underpin Australian sûreté into the longer term. And it is maritime, which is where our histories (Aboriginal and European) began and futures will inevitably carry us.

## PREVENTION BEING BETTER THAN CURE

In 2007 Estonia suffered two waves of cyber-attacks during the Bronze-Soldier incident: the first wave appears not to have been

The cable laying vessel *Team Oman*. So little of cyber space travels by satellite. Nearly all is through the sea in long undersea cables. Making it even more important to be able to control large areas of the sea and protect ships such as the *Team Oman*.





The RN amphibious warfare ship HMS OCEAN. Ships such as this are able to have land forces involved in cyber communications to withdraw to the safety and security of the ship while enhancing their cyber capabilities and thus reducing the land footprint. This in turn can act as a force multiplier, as was seen in the UK's Sierra Leone operation with HMS OCEAN. (RN)

coordinated; the second was, through so called 'patriotic hackers'. In 2008, during the Georgian War, Georgia came under coordinated attack from the commencement of land operations through to the end of August. Because of the preponderance of cable routing through Russia<sup>5</sup> a Cyber Blockade of Georgia was largely effected<sup>6</sup>. The Estonia and Georgian incidents give strong indication that Russia has been learning, scaling and then re-applying what it has learnt through the concept of Razvédká Bóyem (reconnaissance through battle). In Georgia, for example, it is estimated that Russia exclusively controlled Georgian Cyber-space for up to 3 minutes and for the first 72 hours it was the Russian *perception* of the war that was received by the West: 'the Russians as peacekeepers'. In modern warfare, as the West has learned to its cost, it is *perceptions* that count; not a reality 'struggling to get its boots on'.

Providing a Cyber-capability to *project influence* and soft power in a Prevent or Recovery phase appears increasingly important. Noting ADF Amphibious growth, Sierra Leone is frequently quoted. The two operations that occurred in 2000 did so on the cusp of the Cyber-revolution and before 9/11. Nevertheless, the operation by UK Armed Forces was as much about influencing the local and international *interspace*<sup>7</sup> as it was controlling the battlespace. The spearhead battalion of the Parachute Regiment (Paras) arrived to hold the international airport at Lungi and was supported by the Joint Force Headquarters. The JFHQ deployed with its satellite communications and HQ infrastructure – itself posing a fairly significant land footprint and Force Protection demand. The crucial *influence campaign* over this time was to persuade the UN Forces to hold their ground against the RUF (Revolutionary United Front) and to enable the ARG (Amphibious Ready Group) to reinforce the Paras in place. This was largely achieved – buying time for the ARG to take up station two weeks later (a week beyond the Spearhead Battalion was constituted to support). There then ensued a series of complex land and Cyber- manoeuvres, during which time the Paras were reinforced in place; the RUF was defeated and, as significantly, the UN Forces re-routed through a series of political and diplomatic initiatives, including ministerial visits. The ARG not only projected force ashore but *influence* also. It was able to collapse the JFHQ and withdraw key elements to sea whilst using its HF (including packet switching) and U/VHF communications to act as a vital re-broadcasting and Land-Air-Maritime integrating communications centre – through OCEAN – so force and *influence multiplying*. Beneath the successful Sierra Leone campaign was a very effective Cyber-campaign; mounted from the sea.

## DÉNOUEMENT ON LAND

*'Therefore, one hundred victories in one hundred battles is not the most skilful. Seizing the enemy without fighting is the most skilful.'*

Given the vulnerability and cost of satellite communications, it is in the interests of the military to connect to the local Cyber-maritime cables as quickly as it can and create discrete V/UHF/HF and cellular area networks connecting to it. This is a cyber-capability that is more maritime and land than it is space based and would need to be delivered at sea or on land and *switched* between them.

While the Cyber-Dénouement will ultimately be on land, to get the Cyber- to land and then to preserve and secure it, will ultimately require delivery from Sea rather than Space. If one was to consider a future Operation Overlord (recapture Europe WW II), adjacent to the oil pipeline P.L.U.T.O (Pipe-Lines Under The Ocean) would be an essential Cyber-Maritime cable running to the forward operating bases and HQs. The projection of such a capability – and capacity in terms of bandwidth – would be a force and influence multiplier of both offensive and defensive significance. And it would come from the sea. In this respect and relating to Reflexive Control, or RECs, we suggest Cyber-Reflective-Control (CRX™) to be:

*'Control of an opponent's decision which in the end is by influencing, causing or affecting persons or events to determine, shape and give direction to the formation of certain behavioural strategies, especially those based upon soft power and prestige, achieved informally, not by hard power or apparent effort, but by means of providing him with the grounds by which he is able logically to derive his own decision and act accordingly, in a way that is predetermined by the other side (Reay Atkinson, 2010).'*

## FUTURE DESIGNS

During World War II for reasons to do with manoeuvre and specialisation – a key element of *adaptation* – command was essentially *remoted* from operational and tactical control during D-Day and in the Pacific. By removing communications and essentially command from operational and tactical units did three things:

1. Removed sophistication and complication from command structures and other capabilities;
2. Differentiated between strategic, operational and tactical Command and Control responsibilities and;
3. Made the essential communications and command ships less vulnerable to attack.

Command & Influence are one part of the Cyber-; the other is



Control. To be effective, as was demonstrated by HMS OCEAN during Sierra-Leone, such Command Ships also need to act as a *switch* between terrestrial including cellular, maritime and space based communications. If one puts the various requirements together, it would suggest the return of Command Ships perhaps under the title Network Command Vessels or NCVs. Unlike the USN's 2<sup>nd</sup> Fleet command ship USS MOUNT WHITNEY, such ships would be dynamic and adaptable – allowing for the transfer of command from sea-to-shore and vice versa. They would also contain within them significant Cyber-switching capabilities – essential for Computer Network Defence – so that, in the event of a break or re-routeing, they could act as an essential albeit temporary switch, if necessary between the cable breaks. They would need to be of sufficient size to contain the equipment and people necessary to crew such joint headquarters comfortably and for periods of time. Such ships would have an offensive and defensive and dual-use (civ-mil) capability and would perform a vital Command & influence and Control function in any future war; natural disaster or intervention campaign, for example including the deployment of civil cellular infrastructure. Their ability to manoeuvre would make them much harder to attack than existing terrestrial or satellite structures.

Strategically and in all regards, Australia's future political and economic sûreté is vested – as it always has been – in the maritime,



The remains of the P.L.U.T.O line can still be seen today on the French coast. This undersea link brought the necessary bulk liquids to sustain the invasion force and enable it to break out in to the rest of France. Without this vital undersea link Operation Overlord would have been a defeat within weeks.

which is also the Cyber-. The RAN is in a unique position to align its future force structures with the strategic interests of the country and with our allies in the UK, US and NATO to lead the essential change. To do this, it needs to get its thinking and designs right and align accordingly – time, timing and tempo (the three relatives) will be essential. ■

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- 3 1959, UN Committee on the Peaceful Use of Outer Space (COPUOS); the 1967 Outer Space Treaty: 'Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies'.
- 4 The Australian government considers its submarine cable systems to be 'vital to the national economy' and critical national infrastructure (CNI). The Australian Communications and Media Authority (ACMA) has created protection zones that restrict activities that could potentially damage cables linking Australia to the rest of the world.
- 5 In 2008 50%, of Georgia's links with the outside world went through Russia and those remaining (going largely via Turkey) were then re-routed via Russia.
- 6 A direct high-capacity link from Georgia to Western Europe through the Black Sea (by submarine cable, see Figure 2) from the coastal city of Poti, Georgia to Varna, Bulgaria) was nearly completely installed by the time the August 2008 Russian-Georgian conflict commenced.
- 7 The Interspace as opposed to the battlespace is a space where interpersonal interaction and interchange can take place, intra and internationally and between peoples and regions. See also Defense Advanced Research Projects Agency (DARPA) Interspace programme carried out by the University of Illinois <http://www.canis.uiuc.edu/interspace/proposal/results.htm> and Marshall Centre / ARAG Learning & Adapting to Modern Insurgencies, March 2007.

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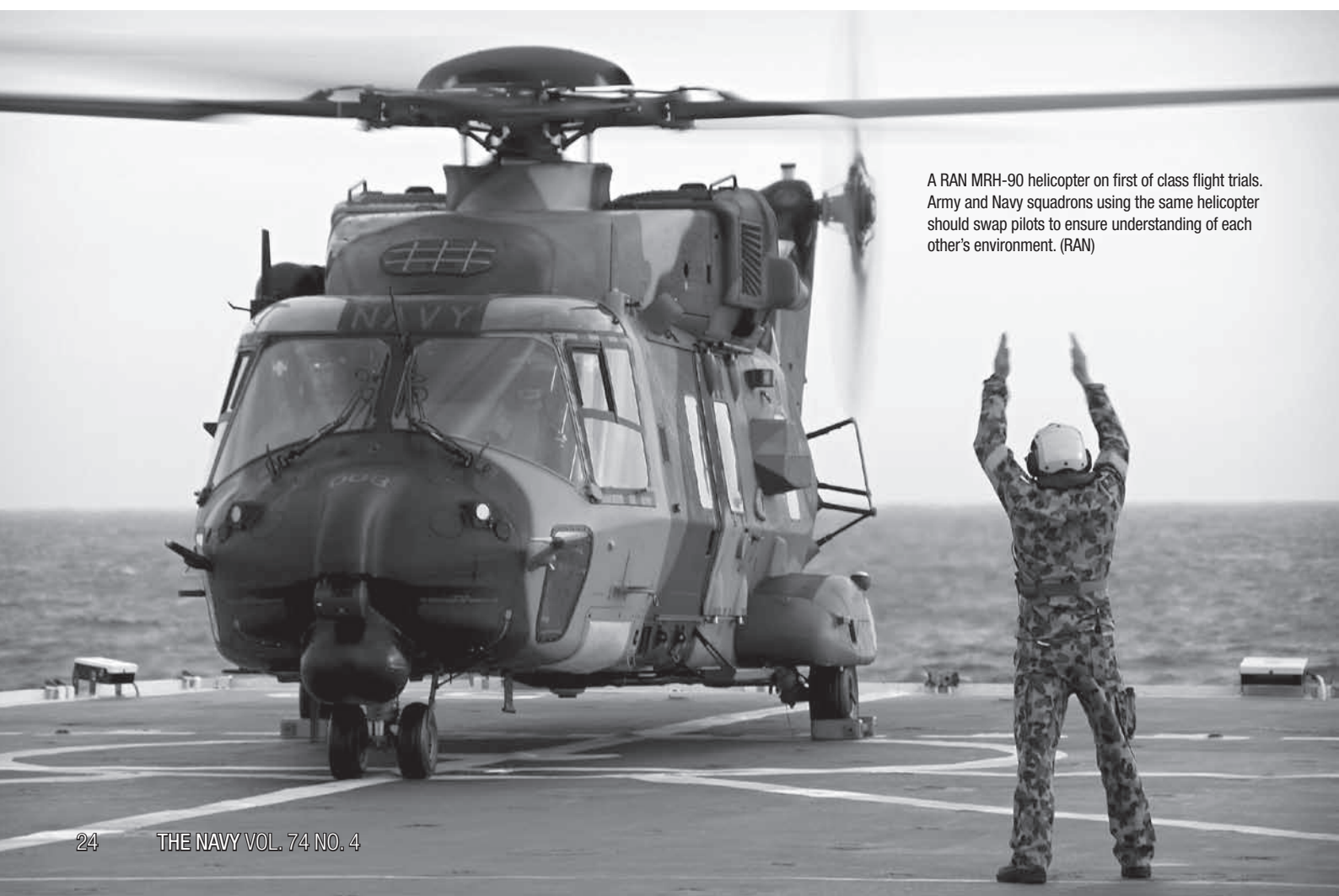
# THE MARITIME AVIATION CAPABILITY

*CDR David Hobbs MBE (RN) (Retd) gives a personal view of the role maritime aviation has to play in the 2013 Defence White Paper.*

The Defence White Paper 'Defending Australia in the Asia-Pacific Century: Force 2030', WP09, envisages an Australian Defence Force moving toward seamless, network-enabled operations under unified command to implement a maritime strategy by 2030. Very few maritime operations are likely to succeed, however, without the participation of an air element. Aircraft of various types form an important part of anti-surface vessel and anti-submarine capabilities as well as contributing to the defence-in-depth that must deny a potential enemy the opportunity to get within weapon-release range of an Australian or coalition task force. In the past maritime operations have not been the first priority of some aviation communities and their co-ordination into an effective and cohesive force will require standards and practices of a very high order and mutual respect between the three Services. Much of the hardware has been identified and is in production or development but human factors will be critical to the achievement of the new force structure, especially the need to understand people who operate in a different environment. If Australia is to form its own maritime task forces, lead a coalition force or even just play a credible part in one, every element

including aviation must understand its own role thoroughly and give respect to those who operate in a different medium above, on and below the surface of the sea and on land.

Helicopters tend to remain relatively close to their bases on land or sea and their operations have become so integrated with everyday operations that RAN and Army Air Corps that they are literally taken for granted in ships or military forces. With the arrival of the Canberra class LHDs both Fleet Air Arm and AAC (Army Air Corps) tactical helicopters will have to be capable of operating in both environments to standards which match agreed 'best practice'. It would seem logical for the RAN's 808 Squadron, when it becomes operational with the MRH-90, to be responsible for evolving 'best practice' in embarked operations and for AAC units to be tasked with similar responsibility for tactical operations over land. The embarkation of troops and underslung loads of equipment for the initial assault phase from the LHD and its immediate follow-up are specialised tasks that require skill, experience and knowledge. It would seem therefore that the ideal 'split' between areas of expertise would fall at the 'feet wet/feet dry' line over the beach. Both RAN and AAC should be capable



A RAN MRH-90 helicopter on first of class flight trials. Army and Navy squadrons using the same helicopter should swap pilots to ensure understanding of each other's environment. (RAN)





An RAAF Super Hornet armed with a JSOW (Joint Stand Off Weapon) on takeoff. Despite its very sophisticated combat system and variety of weapons it can employ at once the Super Hornet is still limited in range to support amphibious operations from Australia. (RAAF)

of embarking effectively at short notice, however, and the ADF is no doubt planning to appoint a naval pilot to each AAC squadron and an Army pilot to 808 Squadron to act as advisors to unit commands when planning moves, embarked flying programmes and tactical assaults. The eventual operation of the same helicopter type, the MRH-90, in both Services with common training will help to establish doctrine.

The new SH-60R Seahawks will spend much of their time embarked in destroyers and frigates and have a more traditionally naval role to play in anti-surface and anti-submarine warfare. They may have to perform many other roles, however, and although the appointment of exchange pilots is not practical in small flights, all aircrew should be trained in the basics of tactical operations ashore. Tasks such as boarding and counter-piracy operations may have to be undertaken by RAN or AAC helicopters embarked in large flight-deck ships and all helicopter aircrew should be trained in these requirements to agreed standards of best practice.

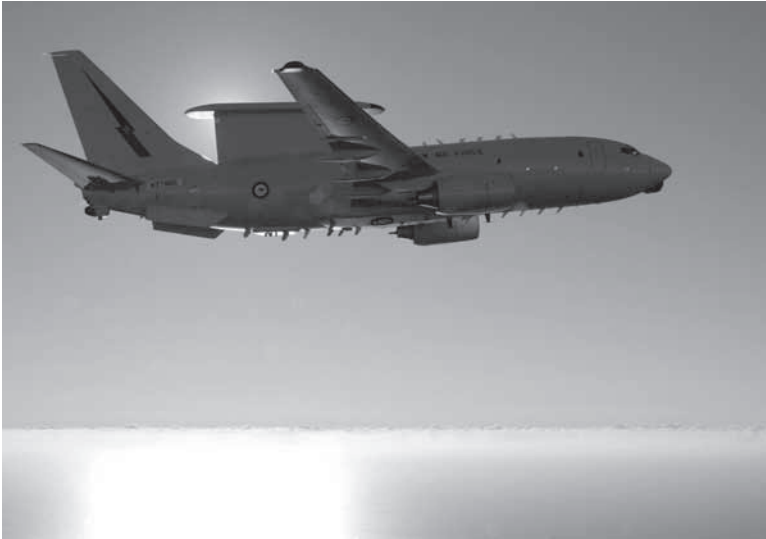
Larger aircraft and fast-jets cannot embark but must still be capable of seamless operational integration with a task force at sea. Their strength is the ability to travel large distances quickly with an impressive array of sensors and communications, their weakness the inability to remain on task for more than a few hours. Thus the number of airframes available and the distance of task force operations from fixed bases in Australia become factors in calculating the distance at which land-based aircraft will cease to be viable over a force at sea. Network-enabled capability will help the aircraft crew to share the tactical picture but they must still have complete understanding of their part in the task force organisation and how best to achieve its commander's aim. F/A-18 fighters working with AEW&C aircraft can give air defence in depth but the missile-equipped air warfare destroyer is the persistent and optimal anti-air weapons system. Missiles from F/A-18s are capable of engaging surface targets but so are others from submarines or surface ships. Surveillance assets would be needed to locate, identify and prioritise the targets and the use of the best-placed weapon and the reasons for its selection must be understood by all participants, not just the PWOs (Principle Warfare Officers) in the ships' operations rooms. F/A-18s can also carry out close air support for assault troops but their use must be co-ordinated

with AAC attack helicopters and naval gunfire support. The fact that F/A-18s can carry out at least three different roles in support of amphibious task force operations underlines the importance of loading them at base with the correct weapons and the task force commander's need to understand the implications of the weapon load that has been ordered and the time that would be taken to change it. A mix of weapons is possible but would limit persistence in any one role. An F/A-18 loaded with anti-surface vessel missiles could not be used for close air support but will still have a limited air defence capability.

The AEW&C Wedgetail aircraft are of critical importance to all maritime operations and can search for air and surface targets over sea and land; transmit and receive data links and fuse data from the aircraft's own sensors and others to transmit target information to weapons systems in ships or aircraft. For maritime operations they are to carry an RAN observer but there is a strong argument to include RAN and Army operators on a significant number of missions both to give immediate knowledge inside the aircraft and to 'cross-pollinate' knowledge of the Wedgetail and its important capability outside the community of aviators who operate it. The flight refuelling tanker force gives land-based aircraft the ability to extend

their time on task and radius of action up to a limit usually decided by the time that the crew can stay effective or that the aircraft engines can run without maintenance such as oil replenishment. Whilst the ability to refuel task force aircraft in flight is important and can be critical in meeting unexpected situations, only limited reliance should be placed on planning fighter sorties which include refuelling to provide longer times on task. In a combat situation, especially one in which troops are being landed against determined opposition, a fighter may use all its weapons in the first few minutes on task and there is little point in sustaining an unarmed fighter with the task force. Another drawback with long-range, air-refuelled operations is the problem that the tactical picture may change rapidly and a fighter launched from a distant base with one set of weapons may need a different set by the time it arrives on task. Operating with a mixed outfit increases flexibility but decreases persistence in any one capability. Long distance flights back to the operating base and the time taken to re-arm fighters and return them to the fight with in-flight refuelling are not a very effective way of operating strike fighters with an expeditionary task force but this is the only option open to Australia at present and it is important to make the best use of it. Again the appointment of liaison officers, preferably RAN pilots or observers, to the F/A-18 force could give the opportunity for better understanding and mutual respect. They would have to undertake two separate fighter tours to defray the cost of training but with a sea tour in between the advantage of cross-pollination is obvious. An ideal sea appointment would be as an 'air warfare officer' in the staff of the amphibious force commander. Another capability enhancing option might be to explore the possibility of operating F/A-18 detachments from USN aircraft carriers for coalition operations.

The inability to operate fighters continuously over an amphibious beach-head at a distance from Australia is arguably the weakest element of Force 2030. The UK once tried what it called the Tactical Air Support of Maritime Operations, TASMO, using designated land-based fighters to support fleet operations "when required". The phrase "when required" showed that the air command regarded this function as secondary and the aircraft, which could not be embarked



An RAAF Wedgetail AEW&C (Airborne Early Warning & Control) aircraft. The Wedgetail's involvement in any future maritime operation will be vital for the fleet's ability to establish sea control as well as providing enhanced warning, and thus protection, for the operation. (RAAF)

in carriers, stayed uselessly on their airfields unable to reach the Falklands War in 1982 while Sea Harriers embarked in two carriers, both significantly smaller than the new CANBERRA, provided air defence, close air support and strike. RAF Harriers were able to fly south to join the carriers which were able to maintain and arm them later in the course of the campaign. This poor use of resources is something the ADF should strive to avoid as it makes plans for the future. The contemporary role model for amphibious operations is the US Marine Corps. It operates AV-8B Harriers from its LHDs and plans to replace them with the STOVL F-35B variant of the Joint Strike Fighter. The Australian Government has announced plans to buy 'up to' 100 F-35s but, despite the fact that the F-35B could operate from the ski-jump fitted CANBERRA, it intends to buy the land-based F-35A variant designed for the US Air Force and, apparently, the decision is not regarded as negotiable. That is a point of view that someone will have to explain to me very carefully as I fail to understand it.

The AP-3C Orion force already works closely with the RAN but even here there is scope for improvement. By 2030, under present plans,

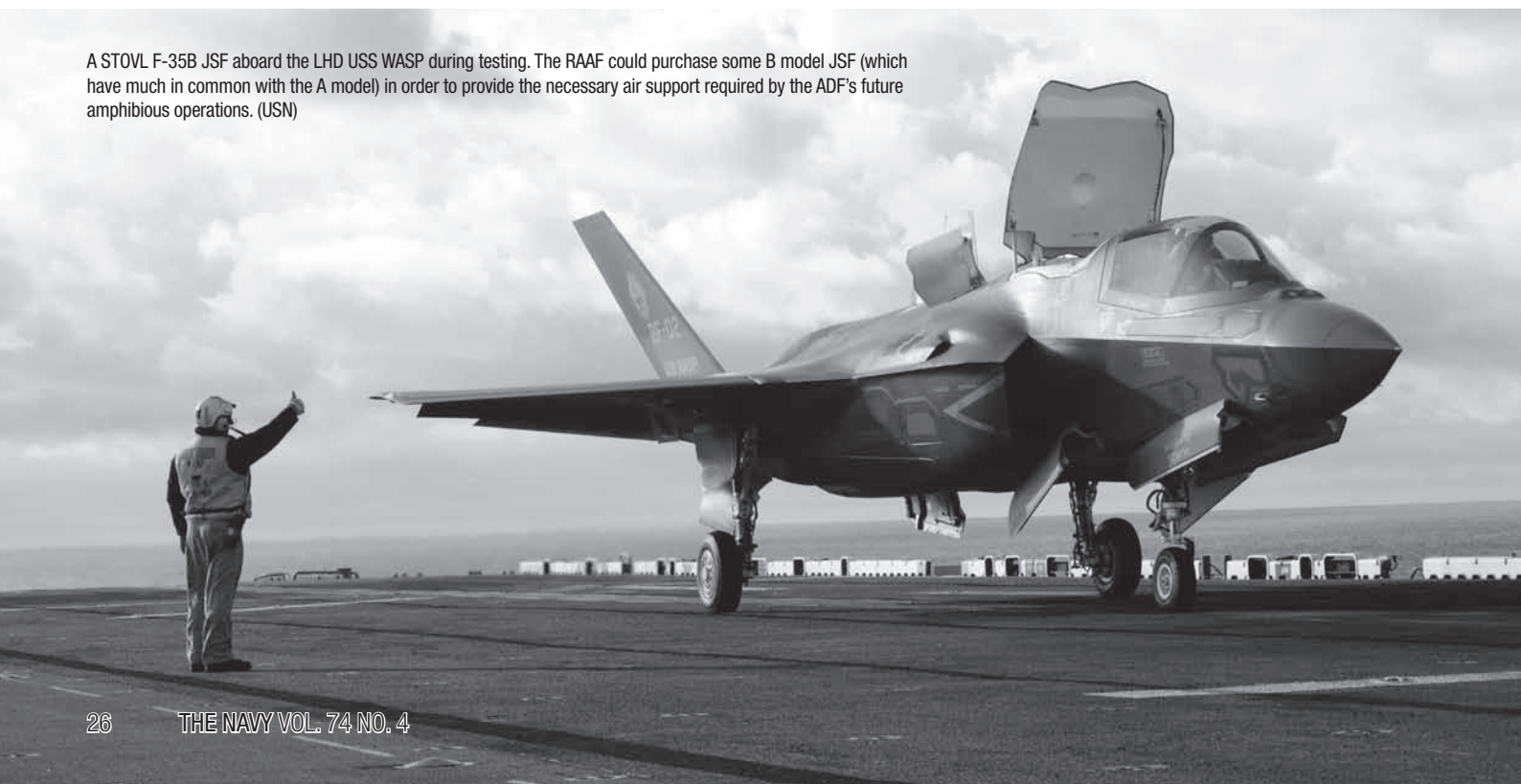
the AP-3 will have been replaced by the AP-8A Poseidon and, perhaps, a small number of MQ-4C unmanned air systems. There is no room for complacency, however, and there is merit in evaluating what improvements can be made in operating the new aircraft types within a task force and on routine surveillance operations. There could be merit in exchange appointments for aircrew, especially sonar operators from the helicopter and AP-3 communities and close liaison with their opposite numbers in submarines.

Operating any aircraft from a ship at sea is not merely a question of training pilots to land on the deck; maintenance personnel have to understand how to secure aircraft, tools and equipment for sea and how to maintain them in confined spaces that are in constant movement. The safe but quick movement of aircraft on deck and between the hangar and flight deck will be an important aspect of operations from the Canberra class that must be well understood and practised. All personnel must understand what to do in the event of a fire, flooding or action damage and, not least, what it is like to live in a warship. The efficiency of aircraft that are only with the task force for hours at a time could be improved by the presence of a small number of exchange RAN personnel in their flight crews to help break

down the human barriers between people who only 'meet' across data-link transmissions for short periods and are unfamiliar with life in other platforms. RAAF aircrew could visit PWO courses and ships at sea to help them understand how the action information organisation in a warship interfaces with them.

Familiarity will breed greater efficiency and, if Force 2030 is to offer Australia the defence capability it needs and deserves, the seamless integration of every form of aviation into network-enabled task forces based around the Canberra class LHDs is vitally important. However, it is not the equipment but the human element that requires the greatest attention from the outset to make the vision work. There are still equipment choices to be made and the F-35 variant, or mix of variants, really does need to be discussed rationally assuming the Australian Government intends to go ahead with the purchase and, of course, that it is not cancelled by the US as a savings measure. ■

A STOVL F-35B JSF aboard the LHD USS WASP during testing. The RAAF could purchase some B model JSF (which have much in common with the A model) in order to provide the necessary air support required by the ADF's future amphibious operations. (USN)





# SUPPORTING THE AMPHIBIOUS CAPABILITY

*Dr Roger Thornhill asks what are the LHDs good for without effective fire support? A properly financed 2013 Australian Defence White Paper may possibly have been able answer that question.*

The ADF's acquisition of two large Amphibious vessels in the form of the Canberra class LHDs CANBERRA and ADELAIDE and the amphibious support ship HMAS CHOLUES has given the ADF a unique capability, with some new problems. No country in the western Pacific or southern hemisphere has such an amphibious potential. However, for the capability to be realised other phases of JP 2048 (the projects that acquired the vessels) need generating as capability enabling phases, particularly in light of anti-access and area denial capabilities and tactics being seen by potential enemies around the world. Without these supporting capabilities, particularly in the area of fire support, the ADF's amphibious efforts essentially mean it's the world's largest, most sophisticated and expensive Red Cross/humanitarian capability in military history.

Army is attempting to understand what the LHDs mean for its future operations through a number of studies looking at the history of amphibious campaigns. However, Army should not be doing this, at least not in isolation, as amphibious operations are part of a sea control strategy and not a manoeuvre component of a land campaign. Navy should be taking the lead. To illustrate the point, the USMC (United States Marine Corps) - arguably the world's leading

amphibious warfare experts - and other professional Marines Corps, describe amphibious operations as a means to "project naval power ashore", not land power as Army is thinking.

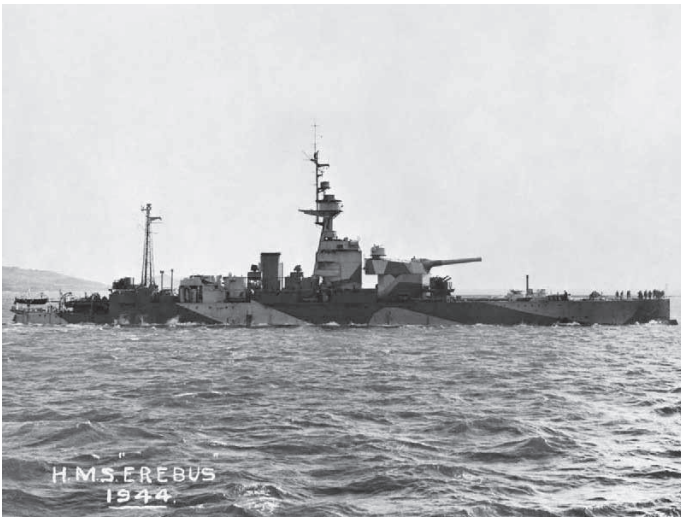
Culturally this is perfectly understandable as armies think in land centric paradigms, which is not a fault but a feature of the way Armies have evolved. The USMC on the other hand are organised, trained and equipped to operate at and from the sea. "Soldiers from the sea" is their title, as opposed to 'soldiers transported on the sea'.

With many of the studies Army has published it tries to draw parallel comparisons with itself and the USMC. In particular, Army has been borrowing ideas, theories and plans from the USMC's operating concepts of STOM (Ship to Objective Manoeuvre) and OMFTS (Operational Manoeuvre From The Sea). Paradoxically though, Army is selectively omitting all references to fixed wing close air support and Naval Gunfire Support (NGS), which the USMC considers essential for their operational concepts to succeed.

This is a big deficiency in its concept development and one that needs a very joint approach as the RAAF has stated publicly in the past that it currently cannot support the ADF's amphibious capability

The Spanish LHD JUAN CARLOS I with landing craft. The Spanish employ Harrier strike fighters from their LHDs to support the troops it embarks with close air support. The ADF will have no such capability for its troops.





The RN WW II Monitor HMS EREBUS. EREBUS supported many amphibious operations very effectively with her two very large 15-inch guns. She was essentially a platform for the guns alone.

beyond 600nm of a friendly air base with fixed wing close air support. Navy has also stated that it has no plans for fixed wing operations for the LHDs. RAAF has also stated that it will not consider a mix of conventional take off (F-35A) and Short Take Off but Vertical Landing (STOVL) versions (F-35B) of the JSF to use from the LHDs. So where does that leave the landings forces?

One way the ADF could mitigate against this limitation is through a reinvigoration of its NGS capability. The RAN has, for many decades now, been a frigate navy. The guns employed on our ships have been lightweight, medium to lower calibre, dual purpose guns - their lineage being in the anti-aircraft role (the US Mk-45 127mm). Over time as the guns became radar controlled they became more accurate, which negated the need for large calibres and high rates of fire. It also meant ships only employed one gun. This accuracy has seduced many navies into the promise of precision standoff, which is fine for air power strikes using 2,000lb bombs but most naval shells are only 60lbs. However, troops in contact with the enemy not only need precision, they need suppression.

Effective suppression fire consists of weight of fire and rate of fire.

The USN has long been the leader in naval technology and concepts. Many navies are thus quite happy to follow what the USN does. In this case, the USN has concentrated on the Mk-45 127mm (5-inch) gun (for dual purpose tasks but predominantly for anti-air). However, many seem to have overlooked the point that the USN operates as a spread of systems. For its troops going ashore they have organic fixed wing air support. They also tend to deploy 100,000 tonne super carriers with 80 fixed wing high performance aircraft. No navy can do this nor has had to find out the hard way since WW II that this system is how the USN is able to achieve what it can.

Of course the USN has at times realised it needed weight and rate of fire for its amphibious operations. It was able to achieve this through the reintroduction of the Iowa class battleships for the Korean War, Vietnam War, Cold War and off Iraq for the first Gulf War. It also sees a continuing requirement with two massive 155mm gun systems for each of its projected DD-21 Zumwalt class destroyers. Each gun turret has a maximum sustained rate of fire of 10 rounds a minute through a water cooled barrel out to 71nm.

One of the first opportunities Navy has to reinvigorate the NGS capability is the SEA 5000 project to replace the eight Anzac frigates. The Italians currently make a very long range

127mm/64 gun but with a water cooled barrel for a high sustained rate of fire. 155mm (6.1-inch) guns may shortly also make a greater appearance in naval service with the USN considering a lightweight 155mm gun system for their projected Flight III Arleigh Burke class destroyers.

Another option for Navy from a properly financed defence White Paper might be a new class of ship in the same mould as the WW I and II Monitor.

A Monitor was a class of relatively small warship which was neither fast nor strongly armoured but carried disproportionately large guns, usually for support of amphibious operations. They were used by some navies from the 1860s until the end of World War II, and saw their final use by the United States Navy during the Vietnam War.

A modern Monitor vessel/s for the ADF could use a simple/known hull with limited machinery for propulsion (i.e. simple but fast enough to keep up with the LHDs). Its defensive electronics and systems (usually where most of the cost lies) can be supplied by proxy from other platforms through the provision of data links, the idea being the ship would only deploy as part of an amphibious task group, its electronics and sensors being just enough to enable it to be Lloyds registered. Its onboard systems etc should be already found in the ADF inventory to cut through life costs and training issues. Its armament would be the guns and the guns only. Be it two 155mm lightweight guns being developed by BAE systems or two -three of the new Italian 127mm/64 Volcano guns. Either option would use existing in service ammunition and provide that suppressive fire support that escorts such as the Anzac and Hobart class destroyers cannot provide given their protection duties of the high value assets on the other side of the horizon from the amphibious bridgehead. This ship would fill the space between the LHDs and the shore line providing sustained suppressive firepower to the troops ashore, and probably better than fixed wing air support from a fixed base many hours flying time away. The cost of each vessel would be the same as three-four F-35 JSF but bring all the advantages of sea power such as presence and persistence.

Without an enhanced NGS capability it is debatable what the ADF's amphibious capability will bring to non-US led operations with any sort of anti-access measure applied. ■



The former HMAS VAMPIRE firing a six-gun broadside. The suppressive fire support capability provided by a ship like VAMPIRE is exactly what is needed by the ADF if its amphibious capability is to be employed effectively.



## BOOKS

### **Warrior to Dreadnought: Warship Design and Development 1860-1905**

By David K. Brown  
Seaforth Publishing, Barnsley, 2010  
ISBN 978-1-84832-086-4  
Paperback, 224 pp, illus, index.

### **The Grand Fleet: Warship Design and Development 1906-1922**

By David K. Brown  
Seaforth Publishing, Barnsley, 2010,  
ISBN 978-1-84832-085-7  
Paperback, 208 pp, illus, index.

Both books reviewed by Rear Admiral James Goldrick (RAN)

Warrior to Dreadnought and The Grand Fleet represent the middle volumes of the late David K. Brown's effort to chart the history of modern British naval design and construction. The original hardback editions appeared in 1997 and 1999. They were and remain highly authoritative. D.K. Brown had impressive credentials, having served as Deputy Chief Naval Architect of the Royal Corps of Naval Constructors (RCNC) and with at least one extremely successful design (the Castle class offshore patrol vessels) to his credit. He always had an acute interest in the development of his profession and was the author of the RCNC's centenary history *A Century of Naval Construction*, as well as many other books and articles.

David Brown had the gift of making clear complex technical issues, particularly the arcane subject of hull design and stability, something not easily understood by the lay reader. A key challenge in warship design is to achieve a balance between making a ship which is a steady weapon platform while at the same time retaining sufficient righting moment to minimise the risk of capsizing. It was possible to have a vessel which a substantial reserve of stability but which was so lively in a seaway that its weapons were very difficult to work – or, conversely, to produce one which appeared 'stable', but which could be easily capsized. David Brown lays out the fundamentals of this subject in *Warrior to Dreadnought* and does away with much of the confusion that surrounds the multiple meanings of the term 'stability'.

In both volumes, the illustrations are extensive, often of outstanding quality and sometimes making their first appearance in a modern publication. The author has also gone to much trouble over the captions, which are extensive and complement the text – and have very few errors.

Capital ships are the focus of the books, particularly *Warrior to Dreadnought*, but Brown does not ignore the smaller units, or some of the more interesting experiments, such as the torpedo ram *Polyphemus* of 1881. His insights into their design and the relationships between the various types are well founded and cast significant light not only on the technological opportunities and constraints of the time, but also the strategic and financial factors involved in setting the design parameters. While naval architects could and did make mistakes, it was often the Admiralty's desire for economy which resulted in less than satisfactory designs. It is an implicit point of Brown's that the most successful ships are those which have been designed for a particular purpose rather than to a particular cost – the inference being that constraints on cost are best met by restraints on purpose or on numbers, not on the size or capabilities of the ships themselves.

Some myths are dispelled. Brown in particular makes the point repeatedly that the Admiralty and the designers of the late nineteenth century were generally well up at the forefront of design and development, that the latest technologies were utilised as soon as a reasonable degree of confidence had

been achieved in their utility (and sometimes before) and that British designs were generally more successful than those of any other country. His evidence is compelling, most notably in the vexed question of steam and sail, when criticism of alleged institutional conservatism has too often neglected the very real limitations of the early steam engines, their lack of range and the difficulties of establishing coaling stations for resupply. The Royal Navy was a world-wide service, not one for coastal defence alone, and there were few ships in its order of battle which did not have an operational requirement for reasonable endurance. For true sea-going purposes, this was not achievable with steam power alone before about 1880.

Although there must inevitably be an element of 'Well, he would say that, wouldn't he?', Brown also makes a good case for the qualities of Admiralty designs by comparison with commercial competitors, such as Yarrow and Thornycroft. In particular, the higher speeds achieved on trials did not necessarily equate to higher service speeds or to equivalent reliability in sustained use. Similarly, some of the 'wonder designs' of earlier years for South American and European customers were not always as impressive as they appeared.

At the end of his work, Brown makes the point that the Washington Treaty was itself a good bargain for the Royal Navy and the United Kingdom. It halted a potentially disastrous naval arms race with the United States, but still allowed substantial building programs and in fact encouraged (particularly through tonnage limitations) much technical innovation. As is clear in his book on the period that followed (Nelson to Vanguard), the real tragedy was the London Treaty of 1930, which curtailed the Navy's programme of modernisation and replacement to a point which undermined the country's base of naval industry and robbed it of much of the impetus of innovation.

There are a few weaknesses in the two books. They reflect to some extent the (largely inevitable and proper) focus of the RCNC on the overall hull design rather than the components, particularly machinery, within it. To be fair, the author summarises many of the propulsion issues accurately and thoroughly – the *Journal of Naval Engineering*, for which Brown wrote several articles, and its predecessor *Papers on Engineering Subjects* are key sources for the second volume and its website [www.jneweb.com](http://www.jneweb.com) is well worth consulting. Much more, however, could have been said about other aspects of engineering, particularly in relation to the effects of the proliferation of auxiliary systems and electrics and the need to provide for their power, as well as on the changeover from coal to oil. Towards the end of Brown's second study, the seeds of increasing relative conservatism were being sown, as in the late adoption of small tube boilers, as well as the apparent lack of interest in other innovations, such as turbo-electric propulsion, and something more could have been said about this and its possible causes.

Another area which remains largely unexamined is that of habitability. While British ships generally compared well with European designs, it is clear that they lagged behind the Americans in many areas, particularly relating to amenities, in the Dreadnought period. This was at a time when such austerity could not be justified by financial limitation and when ship's companies were becoming progressively more educated, politically aware and demanding. While some testimony from RCNC officers as to USN practices is included, there were other witnesses who were more critical of the RN's situation.

Nevertheless, Brown's corpus of work has created the basis for a sound understanding of the major technical factors working on British ship design and has raised the standard of historical debate and comparative analysis on warship production. There can be little doubt that British designs were generally better all-round products than their foreign contemporaries in the era of these two books and that there were good reasons for this greater quality.

As a postscript, it is indicative of the way in which technologies can mature and plateau that these two books, covering 62 years and the transition from *WARRIOR* to the beginning of the design of the battleships *NELSON* and *RODNEY*, span only ten years more than the period in which the nuclear powered aircraft carrier *ENTERPRISE* will serve in commission (1961-2012). Highly recommended.

## TOM'S STORY - AN AUTOBIOGRAPHY

By Tom Fisher, OAM

ISBN 9780859055192

Hesperian Press, Western Australia

books@hesperianpress.com

106 pages

Reviewed by CMDR Greg Swinden (RAN)

On 26 October 1941, 20 year old Able Seaman Tom Fisher said good bye to his ship-mates onboard the cruiser HMAS Sydney and left the ship that had been his home for 19 months. Three weeks later all his mates were dead in what was the Royal Australian Navy's greatest loss of life. Tom asked himself – why had he been spared ? In July 1943 he was serving in the cruiser HMAS Hobart, in the South West Pacific, when she was torpedoed off the New Hebrides – again he escaped death but this time only by minutes.

Tom Fisher was one of the generation who grew up during the Great Depression, fought and won the Second World War and then built the nation we now live in. What started as a few pages of notes to inform his children of what his life was like during the war grew into his life story - but at the same time it became the story of an entire generation of Australian men and women.

After the war he had difficulties adjusting to civilian life but eventually married, raised a family, and went on to become a senior executive in the Royal Automobile Club of WA as well as a stalwart of the St Vincent de Paul Society. Now aged 91 he has written his autobiography; and pulls no punches in his description of life growing up during the Depression, service in World War II and coping with life after the war. Some would call his difficulties adjusting to civilian life as Post Traumatic Stress Disorder - but people of Tom's era would just tell you to 'Harden Up'.

The book also deals with the loss of HMAS Sydney and puts forward a number of views regarding the loss of the ship and calls to account a number of the more outlandish claims made over the years. As someone who was part of the crew, up until only a few weeks before the ship was lost, Tom Fishers recollections put a new slant on this dramatic story.

Don't be confused by the books title into thinking this is just another 'Old Salt' telling his story. Tom's Story keenly describes a bygone era and is the story of hundreds of thousands of Australian's whose work and faith have made Australia the great nation that it is today.

## THE LITTORIO CLASS: Italy's Last and Largest Battleships 1937–1948,

By Erminio Bagnasco and Augusto de Toro,

Seaforth Publishing, Barnsley, UK, 2011.

Reviewed by John Jeremy

Just over 100 years ago there was an engagement between two small warships which is regarded by many as a turning point in warfare at sea and in warship design. On 9 March 1862 two armoured warships, CSS VIRGINIA and USS MONITOR clashed on Hampton Roads, Virginia, in a close-range battle which lasted about four hours. Neither ship did much damage to the other and the battle proved a remarkable demonstration of the effectiveness of armour plate to protect a ship from enemy fire. Monitor was also fitted with the first gun turret to fire shots in anger against another ship.

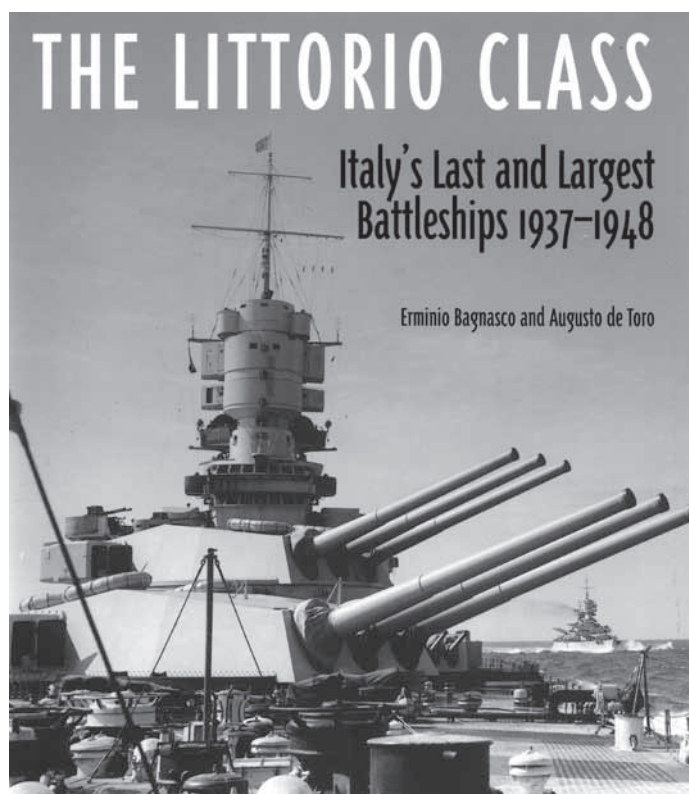
Whilst the use of armour to protect a warship was developed during the Crimean War and John Ericsson, the Swedish-born designer of MONITOR, was not the only originator of the armoured turret, that day during the American Civil War convinced many conservative naval commanders of the benefits of this new technology.

The last British wooden three-deck battleship, HMS VICTORIA was completed

in 1859 at a time when the armoured warship was rendering all similar ships obsolete. The French armoured ships GLOIRE and NORMANDIE and the British response HMS WARRIOR and HMS BLACK PRINCE began the revolution which was accelerated by developments in armament including the adoption of the armoured turret.

In the following decades, battleship development was rapid in Europe and not only in ships for the British and French navies. For example, the Italians built two very powerful ships fitted with four 17.7 inch (450 mm) guns in two 100 ton turrets which had been built by Armstrongs in England. The British response was HMS INFLEXIBLE, completed in 1876. This ship was technically very advanced and her 24 inch (610 mm) armour backed by a similar thickness of teak was the thickest ever taken to sea.

Some remarkable ships were built as the 19th century drew to a close. The battle fleet was the epitome of sea power, built by major nations at great expense to project influence and protect sea communications. For many years, these great fleets remained untested and the ships were based on the general view that an engagement between opposing fleets was likely to open at ranges of about 5,000 m or less. Two significant events were, however, to radically change the design of the battleship. The first was the Russian–Japanese War when, during the engagements on 10 August 1904 and at Tsushima on 27 May 1907, the battle was opened at a range of about 19,000 m – a range at which the typical secondary armament of the battleship was more a hindrance than a help. Tsushima proved to be one of the most decisive naval battles ever and greatly influenced subsequent battleship design.



The second was the construction of the all-big gun, high-speed turbine-powered battleship. The Dreadnought era began when HMS DREADNOUGHT was completed in 1906. Although she gave Britain a great technological advantage, she made the Royal Navy's battle fleet obsolete in addition to those of her rivals. So began one of the great arms races of history as the European fleets, in particular, were modernised in the lead up to World War I.

In 1914 the battleship was probably at the peak of its power. At the Battle of Jutland in 1916 two great battle fleets met in an engagement in which both sides claimed victory, although the British Grand Fleet reigned supreme and unchallenged for the remainder of the war.

Two other developments sealed the fate of the battleship during World War I — aircraft and submarines. As is often the case, it took time for the implications



of these developments to sink in and it took another major conflict twenty years later to radically change war at sea.

Meanwhile, the Washington Treaty of 1922 limited the size and number of major ships in navies of Britain, the United States, France and Italy. Despite some naval staffs recognising that naval strength would in future be measured by the number of aircraft carriers, only the United States and Japan built up a powerful naval air service. When the Washington Treaty lapsed in the 1930s a great deal of effort was devoted to the design and construction of new and very large battleships.

Whilst much has been written about the design and subsequent service history of great ships like the British King George V class, the US Iowa Class and, of course, the German BISMARCK and TIRPITZ and the Japanese YAMATO and MUSASHI, less has been written in the English language about the ships built by others. Erminio Bagnasco and Augusto de Toro's book about the Italian Littorio class fills a major gap in the record.

The design of these ships began in the early 1930s and although the final design for the first two ships of the class was not approved until May 1935, by which time the keels of the first two ships, LITTORIO and VITTORIO VENETO had already been laid down. Both were finally completed by May 1940 and were operational by August that year. Two more, ROMA and IMPERIO were laid down in 1938. ROMA was completed in June 1942 (although sunk by German radio-guided bombs the following year) — IMPERIO was never completed.

The first two ships survived the war to be scrapped between 1951 and 1954. These handsome ships were the epitome of Italian battleship design. They had a full load displacement of around 46,000 tonnes and were about 238 m long overall with a beam of 32.9 m. They were armed with nine 381 mm (15 inch) guns, twelve 152 mm (6 inch) guns and 56 smaller calibre guns. They had a maximum speed of 29 knots at full load and a complement of 1,866 officers and men.

This book is a very comprehensive study of the design and operational history of these great ships. Beautifully presented, it is profusely illustrated with 300 photographs and 150 drawings and includes fold-out plans of the ships. It certainly provides a fitting record of the last Italian battleships and deserves a place alongside similar books on other great battleships on the bookshelves of those interested in warship design and naval history. It is highly recommended.



NOTICE IS HEREBY GIVEN THAT THE

## ANNUAL GENERAL MEETING OF THE NAVY LEAGUE OF AUSTRALIA



will be held at the Brassey Hotel, Belmore Gardens, Barton ACT **FRIDAY 26 OCTOBER 2012 AT 8.00 pm**

### BUSINESS

- 1 To confirm the Minutes of the Annual General Meeting held in Canberra on Friday 28 October 2011
- 2 To receive the report of the Federal Council, and to consider matters arising
- 3 To receive the financial statements of the year ended 30 June 2012
- 4 To elect Office Bearers for the 2012-2013 years as follows:
  - Federal President
  - Federal Vice-President
  - Additional Vice-Presidents (3)

Nominations for these positions are to be lodged with the Honorary Secretary prior to the commencement of the meeting.

### 5 GENERAL BUSINESS:

- To deal with any matter notified in writing to the Honorary Secretary by 16 October 2012

## ALL MEMBERS ARE WELCOME TO ATTEND

By order of the Federal Council

**Philip Corboy**  
Honorary Federal Secretary

PO Box 128  
Clayfield QLD 4011

Tel 1300 739 681  
Fax 1300 739 682

The strategic background to Australia's security has changed in recent decades and in some respects become more uncertain. The League believes it is essential that Australia develops the capability to defend itself, paying particular attention to maritime defence. Australia is, of geographical necessity, a maritime nation whose prosperity strength and safety depend to a great extent on the security of the surrounding ocean and island areas, and on seaborne trade.

## The Navy League:

- Believes Australia can be defended against attack by other than a super or major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space around us and to contribute to defending essential lines of sea and air communication to our allies.
- Supports the ANZUS Treaty and future reintegration of New Zealand as a full partner.
- Urges close relationships with regional powers and particularly with the nearer ASEAN countries, PNG and South Pacific Island States.
- Advocates the acquisition of the most modern armaments, surveillance systems and sensors to ensure that the Australian Defence Force (ADF) maintains some technological advantages over forces in our general area.
- Advocates a significant deterrent element in the ADF capable of powerful retaliation at considerable distances from Australia.
- Believes the ADF must be capable of protecting essential shipping both coastally and at considerable distances from Australia.
- Endorses the control of Coastal Surveillance by the defence force and the development of the capability for patrol and surveillance of the ocean areas all around the Australian coast and island territories, including the Southern Ocean.
- Endorses measures being taken to foster a build-up of Australian-owned shipping to assist the economy to support the ADF and to ensure the carriage of essential cargoes to and from Australia in time of conflict.

**As to the RAN, the League,** while noting the important peacetime naval tasks including border protection, flag-showing/diplomacy, disaster relief, maritime rescue, hydrography and aid to the civil power:

- Supports the concept of a Navy capable of effective action in war in both the Pacific and Indian Ocean proximate areas simultaneously and advocates a gradual build up of the Fleet and its afloat support ships to ensure that, in conjunction with the RAAF, this can be achieved against any force which could be deployed in our general area.
- Believes that the level of both the offensive and defensive capability of the RAN should be increased and welcomes the Government's decisions to acquire 12 new Future Submarines; to continue building the 3 Air Warfare Destroyers (AWDs) and the two landing ships (LHDs); and to acquire 8 new Future Frigates,

a large Strategic Sealift Ship, 20 Offshore Combatant Vessels, 24 Naval Combatant Helicopters, and 6 Heavy Landing Craft.

- Noting the deterrent value and the huge operational advantages of nuclear-powered submarines in most threat situations and the need to train our own submarine forces, recommends that the future force include proven off-the-shelf nuclear-powered vessels.
- Noting the considerable increase in foreign maritime power now taking place in our general area, advocates increasing the order for Air Warfare Destroyers to at least 4 vessels.
- Welcomes the decisions to increase the strength and capabilities of the Army and Air Force and to greatly improve the weaponry, and the intelligence, surveillance, reconnaissance, cyberspace, and electronic warfare capabilities of the ADF.
- Advocates that a proportion of the projected new F35 fighters for the ADF be of the short-takeoff and vertical-landing (STOVL) version to enable operation from small airfields and suitable ships in order to support overseas deployments where access to secure major airfields may not be available.
- Advocates that all warships be equipped with some form of defence against missiles.
- Supports the development of Australia's defence industry, including strong research and design organisations capable of constructing and maintaining all needed types of warships and support vessels and advocates a continuous naval ship-building programme.
- Advocates the retention in a Reserve Fleet of Naval vessels of potential value in defence emergency.
- Supports a strong Naval Reserve to help crew vessels and aircraft and for specialised tasks in time of defence emergency.
- Supports a strong Australian Navy Cadets organisation.
- Advocates improving conditions of service to overcome the repeating problem of recruiting and retaining naval personnel.

## The League:

- Calls for a bipartisan political approach to national defence with a commitment to a steady long-term build-up in our national defence capability including the required industrial infrastructure.
- While recognising budgetary constraints, believes that, given leadership by successive governments, Australia can defend itself in the longer term within acceptable financial, economic and manpower parameters.





The ASMD (Anti-Ship Missile Defence) updated Anzac class frigate HMAS PERTH at the international naval exercise RIMPAC 2012 with her Seahawk carrying underslung cargo for the ship. (USN)

A Harpoon Block II anti-ship missile being launched by HAMS PERTH during the recent RIMPAC 2012 naval exercise off Hawaii. The missile has an internal GPS allowing it to be used against land based coastal targets. This was the first test against a coastal target for the RAN's Block II capability. (RAN)







The Indian Navy's newest aircraft carrier, INS VIKRAMADITYA ("Brave as the Sun"), at the Sevmash shipyard in Severodvinsk, Arkhangelsk Oblast, Russia. The ship is now complete and on sea trials. VIKRAMADITYA is a modified Kiev class aircraft carrier, the former ADMIRAL GORSHKOV, built in 1978–1982 at the Black Sea Shipyard, Mykolaiv, in the Ukraine. She has been fitted with a ski jump and arrestor wires for MiG-29 Fighters.



Two new USN P-8 MPA (Maritime Patrol Aircraft) at RAAF Base Peace in WA. The two aircraft were in Australia undergoing OT&E (Operational Test & Evaluation) against the RAN's Collins class submarines. The P-8 is the chosen replacement for the RAAF's AP-3C Orion MPA. (Defence)