

# THE NAVY

THE MAGAZINE OF THE NAVY LEAGUE OF AUSTRALIA



## THE MULTI-ROLE FLEXIBLE WARSHIP

## THE 2015 CRESWELL ORATION

## THE RUSSO- JAPANESE WAR 1904-1905

## BEATTY AND THE BIG CATS: A FATAL CONVERGENCE



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# THE NAVY

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**Front cover:** HMAS SUCCESS leads HMNZS TE KAHA and HMAS ANZAC through the Mediterranean en-route to their respective ANZAC Day commitments throughout Turkey and Greece. (RAN)

## CROSS OVERS AND STEP CHANGES

This issue of *THE NAVY* has at, its heart, change – from one state-of-being to another. This is as true of the international stage as it is of our own local setting. Articles range from Rear Admiral Stu Meyer's thought-provoking Creswell Oration; to Beatty and the Big Cats; to an argument for flexibility in multi-role warships, to the Battle of the Yellow Sea – the Russo-Japanese war of 1904-1905. At the core of each paper is change – an end of age and of new beginnings.

The Russo-Japanese war occurred in the middle of what may be described as the Turbine Age (1871-1920), an example being Sir Charles Parson's *Turbinia* (that raced through the British Fleet at the 1897 Spithead Review). An age typified by the Dreadnoughts; tactics first realised in the Russo-Japanese war and proven in the demise of the British and German Grand Fleets in the North Sea, a decade later. End-of-age is characterised by turbulence, where linear, straight forward models no longer apply – a time of instability and uncertainty. The industrialised levée-en-masse, delivered on the battlefields of the Dardanelles, France, Russia (the forgotten front), and submarine warfare, defined the end of empires and a new Industrial Age (1921-1970). It was also a time of uncertainty, as one system came off-line, and a new, as yet uncertain and unpredictable Industrial Age, emerged. An age that saw the rise (and ultimate eclipse) of totalitarian industrialised regimes, including: Stalin's Russia, Hitler's Germany and the 'Great Japanese Empire'. It coincided with / created the conditions for the Great Depression that so marked and affected our Great Generation, born between 1915 and 1929. A generation that went on to fight WWII and create the conditions of International stability, Law and Order resulting in the United Nations; what became the European Union; NATO and the British Commonwealth.

Australia played a pivotal role in defining and underpinning: the United Nations; rebuilding / capitalising the industrial economies (of Japan and Germany); articulating an inclusive Commonwealth; encouraging the European Steel and Coal Pact (that became the EU) and is now a NATO Contact Country and Global Partner. Moreover, it was Australia's 'First Army' that defined what would become known as Blitzkrieg under General Sir John Monash – a view, shared by this column, is that Monash should posthumously be recognised as Field Marshal. It was also the Australian Submarine, HMAS AE2 (the Silent Anzac), that pioneered submarine warfare in the Mediterranean and Black Sea and it was Australians who planned and led the successful withdrawal from Gallipoli, by sea. All from a country that, in 1915, was barely a decade old. In all this time, our common and connecting theme be it in France or the Dardanelles, has been the sea – Australia's eternal mantle and gift.

The Great Depression and its lessons are often ignored and forgotten. Talk to today's politicians about the Great Depression and ask them 'when it began' and 'how it ended'. Few can tell you. It began in 1929 and ended 10 years later, in world war. The question we should be asking our leaders, today, is 'how does the Great Recession end?' In a 2004/5 forecast a small assessment group in UK Defence identified the impending threat of the Global Recession. It also modelled that the Great Recession (or Global Financial Crisis) would last at least 10 years before GDP recovered to 2007/8 levels. This may, in fact, be optimistic as the US stuttering, jobless recovery might testify and China teeters between implosion and unrestrained hyper-competitive expansion – reinforcing the question 'how does it end?'

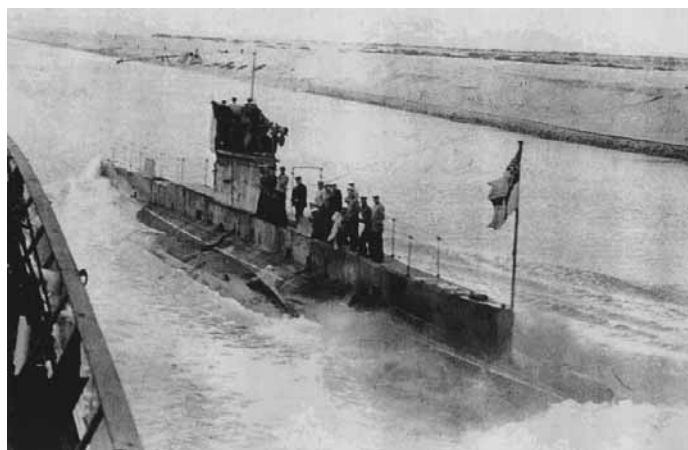
We are again at the end of one age (the Information or Computer age, 1971-2020) and the beginning of another, yet to be defined. The same unpredictability and uncertainty pertains as the old age comes off stream. This time, though, the end of age is also coincident with the Great Recession and at a time of near-perpetual-global-conflict in the Middle East, South West Asia, parts of Africa, the Americas (the drug wars across the US-Mexican border), the Caucasus / Black Sea, the Mediterranean and Eastern Europe – when illiberality is re-defining the international scene and alliances, as between Russia and China.

The Royal Australian Navy and our Merchant Marine have two founding Navies – the British and the United States. In the past, we have been able

to learn, adapt and share / lean on these navies. Both navies have largely held the RAN 'in Class' as our Design Authorities. This was the case up and until the end of the 20th Century and held great advantage in terms of scale and fleet composability (including interoperability), at reduced overhead. It also created some costs and absurdities – such as running two different Damage Control regimes, one USN and the other RN. Today, considering our amphibious warships and submarines, this is no longer the case and we have an emerging Fleet that is unique by design, type and build to Australia. If we are to sustain, operate, retain and maintain these capabilities at some meaningful capacity over the 21st Century, then we will need to bring our Fleet into Class; while developing and retaining the skills of a Design Authority. Otherwise, these fine capabilities will be one-offs; giving us limited opportunity to successfully learn, adapt, scale, sustain and efficiently compose future fleets.



*Turbinia at Speed.*



*HMAS AE2 passing through Suez Canal in 1915.*

Why should China and Russia holding exercises in the Mediterranean be important to Australians? This column suggests for four reasons: first, civilisations from Greece on, have expanded through their Mediterranean navies; secondly, the Republican (Commonwealth) Navy of Britain earned its far-water spurs against the Barbary pirates (under General-at-Sea Robert Blake), as did the US Navy, during the first and second Barbary wars and, finally, the RAN did so in WW1 and then, again, in WWII. Today, with the exception of Nuclear Deterrence, the RAN may eclipse the RN in the next decade. This column takes no pleasure in stating this. It sees the demise of the RN (see *THE NAVY*, H. Morant, 'The Terminal Decline of the RN', Vol. 68, No. 3, 2006) as a significant concern to the global economy, peaceful trade and Freedom of / on the High Seas. A UK without an effective and capable Royal Navy is inconceivable – and perhaps that is the point: no RN, no UK? From this perspective and as foreshadowed

by the recent election, the UK's 2015 security and defence review will need the political will and capital determination if it is to restore RN prestige and national unity of purpose.

The Navy League promotes the view of Australia as a maritime nation, which this column suggests should be the focus and safeguard for the Australian economy, its defence, industry and security interests into the 22nd Century. This should also be the focus of our 2015 Defence White Paper, as it was in 2009. Mao, when asked about the French Revolution, replied 'that it was too early to tell'. The same may yet be said about the rise of China and the [relative] decline of the US. Notwithstanding, if we are to make sense of the new age and sustain, preserve and enable our maritime defence and economic networks, peaceably, it will be necessary for Australia to develop its own unique skill sets; balancing between various competing Pacific and Global choices. This needs to be a time of reflection, co-dependent thought and (then) action, as we think through the challenges and take the necessary steps to influence outcomes favourable to Australia and Australians. ■

## CORRECTION



In the last issue we mistakenly listed the essay Taffy 3 as the 2nd place winner of the Non-professional category for the 2014 essay competition. The essay actually came third in the professional category.

## FROM OUR READERS



### Dear Editor,

I would suggest the 'valley of death' to be a snappy, self-serving slogan of our naval shipbuilders that should be studiously ignored by our politicians. I believe:

Governments have never been good at business, particularly defence business, and, most particularly, the naval shipbuilding business.

Australian naval shipbuilding is totally dominated by government and/or foreign owned builders. For example, ASC, BAE, Thales and Navantia. Only Forgacs and Austal, who feed on the naval crumbs, are private and local. Of those, Austal does most of its business in the USA.

[Australia has] a number of globally competitive, locally owned shipyards such as Incat, Austal, RDM and Harwood Slipway that could quickly adapt to naval work in the event of a major war.

Australia does not manufacture any diesel engines, let alone ship-sized ones. Nor do we make any significant naval electronics or weaponry. All we really do here is weld up the hull sections and install the foreign made components at enormous cost.

I question why Australia 'continues to build foreign designed and equipped ships and submarines here when they could mostly be built overseas for around half the price? If the real reason for retaining naval shipbuilding in Australia is to provide employment in Port Adelaide, Williamstown and Newcastle then its costs should be applied to the welfare budget, not defence.

I would add that in the raucous debate over the future of Australia's naval shipbuilding it is usually forgotten that Australia is home to a number of very capable and, most importantly, globally competitive commercial ship builders, designers and materials and equipment suppliers.

If the whole process of naval ship purchasing were to be reformed to be more practical, economical and commercial, the Navy, taxpayers and Australian ship builders would all benefit.

The fact is that Australia does not manufacture diesel or gas turbine engines, propulsion systems, significant marine electronics or weapon systems. So, our shipbuilding essentially involves fabrication of metal plate and installation of components manufactured overseas.

There are a number of Australian companies that are world leaders in vessel design, construction and outfitting. Designers such as Incat Crowther, One2Three, AMD (which designed the "platforms" for China's large fleet of supersonic cruise missile attack boats), Sea Transport Solutions and Southerly Designs, among others, are all both experienced and competitive across a range of vessel types and construction materials.

Australian ship builders such as Incat, RDM, Austal, Evolution Commercial and Harwood Slipway are all globally recognised and, importantly, profitable without subsidy. Australia also benefits from having numerous suppliers of materials and equipment that could easily adapt to naval requirements.

The naval shipbuilding problem in Australia is not one of lack of capability. Rather, it is one of the "dead hand" of government ship purchasing processes discouraging our globally competitive ship builders and their suppliers from wanting to deal with government.

### Neil Baird

Neil is a member of the executive committee of the NSW Branch of the NLA. He is a Joint Facilitator of the Federal Advisory Council of the League.

## NAVAL SHIPBUILDING IN AUSTRALIA – A CONTINUING DISCUSSION

In support of the 2015 Defence White Paper the RAND Corporation was commissioned to conduct an investigation. To quote from the RAND Report the purpose of the investigation, described as three-pronged, was to:

- “**provide** an understanding of Australia’s current shipbuilding capabilities and gauge how alternative acquisition strategies might affect both the capacity of the domestic industrial base and the total cost of the enterprise;
- **compare** the costs of Australia’s naval shipbuilding industry with overseas manufacturers that produce platforms of comparable size and scope; and,
- **assess** the economic costs and benefits of government investments in Australia’s shipbuilding industrial base under the various enterprise options”

The RAND Corporation conducted a substantial investigation into the issues outlined above. It has provided a Report of several hundred pages detailing the many matters that impact upon the question of building warships in Australia. The RAND Report sets out four “overarching” findings:

1. That **production** of naval warships in Australia involves a 30 to 40 percent price premium.
2. That the **economic benefits** of a domestic naval shipbuilding industry are unclear and depend upon broader economic considerations. The industry could potentially employ more than 2000 people in long-term positions.
3. That domestic production offers wider **strategic benefits** and flexibility, including avoiding dependence on foreign sources and enabling ship alterations, modernisations, life of class maintenance and support for local suppliers.
4. That sustaining a naval shipbuilding industry will involve adopting a **continuous build** strategy starting with the SEA 5000 Future Frigate.

The findings of the RAND Report are in many respects *unsurprising*. They are consistent with many such reports that have on previous occasions examined Australian warship building. The *Navy League* has long had an interest in warship building in Australia. It has many times expressed its view in favour of building ships in Australia.

In a submission to the Senate Foreign Affairs, Defence and Trade (FADT) Committee some 10 years ago the *League* stated that advantages to be gained from building warships in Australia included:

- **Employment** – in the building of the ANZAC frigates over 1,000 Australian firms received contracts;
- Acquisition of **skills** and development of industry;
- The **through-life** maintenance, repair modernisation and upgrade of ships.
  - While it is possible to carry out these tasks in Australia for ships that have been built overseas, it is much easier to do if the ships have been built in Australia, since the knowledge and experience is here.
- The **current account** balance.
- **Tax** paid by the workforce and by industry.

It is the view of the *League* that the above considerations indicate the long term advantages to be had in maintaining a naval shipbuilding industry and if necessary paying a reasonable premium for local construction. While strongly advocating shipbuilding in Australia the *League* has recognised that there are circumstances that might justify an overseas build.



ATK MK46 Mod 2 Gun Weapon System.

In evidence to the Senate FADT Committee the *League* proposed that the two LHDs then under consideration be constructed in Spain and completed and fitted out in Australia. Similarly, in a submission to the Senate Economics Committee last year the *League* supported the decision to call for tenders from overseas yards for two large replenishment ships.

Extending facilities at great cost and harnessing resources to build a limited number of ships of considerable size is always likely to be an expensive and time consuming exercise. For that reason, the *League* supported the decision to construct the hulls of the two 27,000 tonne LHDs in Spain and now supports the decision to call tenders from overseas yards for the two large replenishment ships. In this respect, the *League* supports the versatile/flexible modular approach separating *platform* from *content*. Both LHDs were fitted out and made into RAN Warships in Australia – where the hi-tech skills remain.

These two particular cases aside the *League* remains of the view that we should build the ships that the Royal Australian Navy needs in Australia. Sustaining the *capability* of the current participants in Australian naval shipbuilding is vital if we are to maintain the strategic industry capability they provide.

The key to maintaining this capability is a continuity of orders and a concentration on building those ships most relevant to this aim, warships and submarines. In maintaining this capability we may have to pay a premium, although this is not necessarily so if the programmes are of sufficient size to allow Australian industry to benefit from continuous production.

Indeed, the benefits of continuous production can be said to be the strongest point to be made by the RAND Report. A continuous build strategy, elsewhere in the RAND Report referred to as “steady production drumbeats”, is not a new recommendation, but it is one well worth repeating.

There is one odd statement in the RAND Report, when it says:

“Historically, Australia has acquired ships from overseas – for example the *Charles F Adams* guided missile destroyer and the first four *Oliver Hazard Perry* guided missile frigates”

While it is true that Australia has acquired ships from overseas, the RAND Report fails to acknowledge, for example, six Type 12 frigates and ten *Anzac* frigates, all built in Australia. The omission of the *Anzac* build, in particular, is curious – as it is generally considered to be the best example in Australia of the benefit of a continuous build strategy.

It is to be hoped that when Government decide on the Future Frigate it will follow the many recommendations made over the years, including most recently in the RAND Report, and adopt a continuous build strategy. ■

# THE MULTI-ROLE FLEXIBLE WARSHIP

By John Jeremy

**The rising cost and complexity of modern warships of all types is driving a trend amongst navies of all sizes towards ships which can either undertake a wide range of tasks or, alternatively, ships which can be *adapted* at short notice to undertake specific roles but are unable to do everything at any one time. John Jeremy considers *flexible* warships, ships which are *adaptable* to different roles**

Both *multi-task* and *adaptable* types of ship might be regarded as *multi-role* warships, but the term more correctly describes ships like the RAN's new Hobart-class air-warfare destroyers. These ships will be capable of area command and control, anti-aircraft defence and anti-submarine warfare. They are also expensive and very valuable assets and using the future HMAS HOBART for sovereignty patrol duties could accurately be described as 'using a Rolls Royce to squash cockroaches'. Even using the Anzac-class frigates in this role is, at least, employing a BMW for the same purpose.

This paper considers *flexible* warships, ships which are adaptable to different roles depending on the circumstances and which employ 'a common hull design adaptable to multiple missions to make tomorrow's Navy flexible, versatile and affordable'.<sup>i</sup>

## BACKGROUND

Prior to the Second World War ships like cruisers, destroyers and sloops had reasonably clearly defined roles and the distinction between ship types was readily apparent. The need to produce large number of vessels quickly resulted in the construction of similar hulls with a different emphasis on capability.

Two good examples of the latter are the Loch- and Bay-class frigates of the Royal Navy. In 1942 the design of a new frigate was begun which incorporated the experience with the Flower-class corvettes and the

River-class frigates in the Battle of the Atlantic. It was estimated that up to 145 of the new ships would be needed and the design of the Loch class, somewhat larger than the River class, was approved in May 1943. The ships were designed for prefabricated construction, with structural engineering firms contributing to the effort of the selected shipbuilders. Parts of the ships, like bridges and the superstructure, were fabricated by six of the thirteen yards involved, and wireless offices, sonar and radar spaces were supplied to the builders complete.<sup>ii</sup>

The Loch class frigates were designed for antisubmarine warfare. Twenty eight were completed in this configuration, with another nineteen completed as anti-aircraft frigates — the Bay class. A similar modification was carried out in Australia to the design of the original River-class frigate to create a version with improved anti-aircraft armament, correctly known as the Modified River Class. Four were completed to this modified design. Another wartime ship designed for rapid construction was the US-built destroyer escort. Designed to meet a British requirement for a large number of convoy escorts, some 1043 ships had been ordered by June 1943 with most then intended for the US Navy. The design varied depending on the selected armament and the selected propulsion machinery. 563 ships were completed by the end of the war.<sup>iii</sup> Some hulls were converted to fast troop transports. The conversion, which was very simple, was partly justified to avoid the industrial impact which would have eventuated from the wholesale cancellation of hulls as the battle against the submarine was being won.<sup>iv</sup>

The Type 12 anti-submarine frigate was approved in February 1950. It was subsequently developed into the very successful Leander class with some 70 ships of this basic design ultimately built. The Australian version, the River class, had six ships built to the basic design. HMAS STUART (seen here) was a result of the derivative to the basic design. (RAN)



## CHANGING FUTURES

At the end of World War II there were very large numbers of relatively new destroyers and frigates, most of which were consigned to reserve fleets. As early as mid-1943, before the threat from the fast submarine was known, the US and UK were working on the design of a standard class of escort vessel for construction in both countries. The aim was to develop a ship to provide anti-submarine, surface and anti-aircraft protection in a common hull of rather higher speed, around 24 knots, employing steam turbine machinery. This project merged with plans for a new class of sloops, essentially a faster version of the successful Black Swan class – versatile ships designed and built to full naval standards.

Designing a common hull for all the versions proved to be problematic as displacement of the different versions grew. For example, a slower ship might suit the anti-aircraft and aircraft-direction ships and a faster ship ASW. The common hull concept was retained for the diesel-powered frigates which became the Leopard class (Type 41) and the Salisbury class (Type 61). The design of the anti-submarine ship was delayed by the need for design resources to be devoted to the conversion of surplus wartime destroyers to anti-submarine frigates to meet the urgent need for ships to combat the threat from high underwater speed submarines. The sketch design for the ship, which became the well known and very successful Type 12 anti-submarine frigate, was approved in February 1950.<sup>v</sup> Subsequently developed into the Leander class, some 70 ships of this basic design were ultimately built. The design of these new classes was intended to produce a series of warships which could be rapidly built throughout the Commonwealth by builders who were not necessarily used to warship construction. In the event, the ships proved to be far from simple to build.

## COMMON HULLS

The idea of using a common hull for similar ships fitted out for different primary roles persisted into the 1960s. An example is the Australian Light Destroyer. The DDL was originally conceived in 1966 as a result of experience during the Malaysian/Indonesian confrontation. The need was then seen for some 20 fast, simply-armed ships to back up the destroyer force. The possibility of producing variants of the design in a common hull



HMS CHARYBDIS (F-75) a Leander class frigate converted for Exocet and Seawolf 1979-1982. There were many versions of the Leander made during their time in service.

of about 1700 tons was seen to be an advantage and in 1967, discussions were held with the Royal Navy. The RAN withdrew from the joint project in November 1968 and the RN ship ultimately became the Type 21 Frigate.<sup>vii</sup> The DDL project was cancelled in 1973.

A good illustration of the impact of the modern weapons of that time on ship design is the Australian Ikara anti-submarine missile installation in the Australian Type 12s. The magazine and handling system for this weapon was effectively built into the ship — rather than being a component which was placed in the ship. Other early missile systems were similarly challenging for shipbuilders, both in UK and US designs. The British County-class destroyers were, for example, designed almost entirely around the handling equipment for the Sea Slug missile. The US Navy's Talos also consumed a large part of the ship and was effectively built into the structure.

## CHANGE FUTURES

Clearly, something had to change. Whilst the complexity of the ships designed after World War II grew rapidly, the development of their weapons and sensors and continued at an even greater pace. It takes about ten years to get a modern frigate from start of design to start of production. When the ship is customised around a particular weapons fit, the combat system is likely to be at least fifteen years old by the time the first ship is delivered. Modernising such a ship is a complex, difficult and very costly task, as the new generation combat system is likely to require extensive changes to mechanical, electrical, ventilation and hydraulic systems and changes to the ship's structure.

One approach is to design a simpler warship which could be expected to be replaced after a relatively short life, say ten to fifteen years, rather than extensively modernised. The commercially-designed British Type 21 frigate is an example of this approach. During the 1970s and 1980s, changes in shipbuilding through the widespread use of computers in production helped to enable block construction techniques and greater standardisation between ships.

In the United States a program called SEAMOD (SEA systems modification and modernisation by MODularity) was begun in 1975. The use of standard interfaces and hardware also could simplify maintenance and modernisation — modules could



HMS FIFE (D20) Cheers Ship. The British County-class destroyers were, for example, designed almost entirely around the handling equipment for the Sea Slug missile

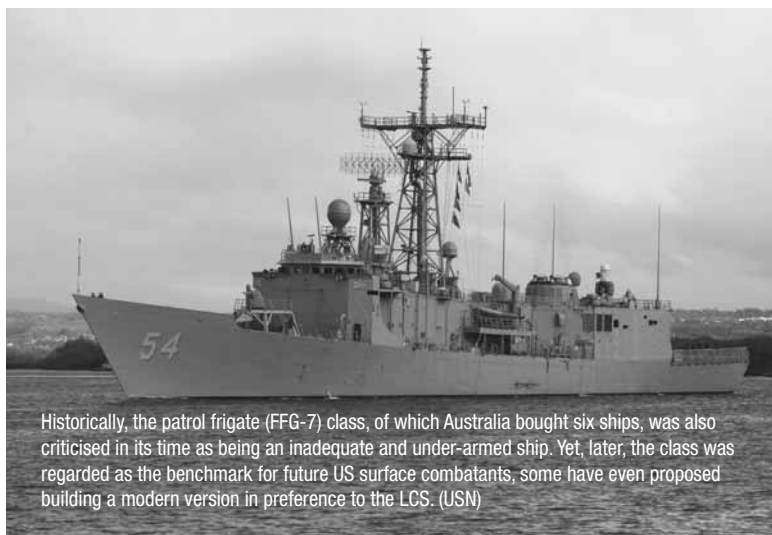
simply be changed as necessary.<sup>viii</sup> Whilst modularity makes a great deal of sense for cars which are built in their thousands, and aircraft also built in large quantities, warships are usually built for a particular mission and in small numbers. The adoption of modular components, and large ones like combat system elements, also requires more complicated structure to mount the modules which increases hull weight.

## MULTI-PURPOSE SUCCESS

The process of change finally began in Germany. In the late 1970s, Blohm & Voss developed their MEKO concept of modularity. Translated from the German MEKO means 'multi-purpose combination'. The MEKO system is based around the patented functional unit, which can contain a gun, missile system, air conditioning plant, or even an electronic space, which might comprise one or more functional units.

Despite the weight penalties with this system, there are obvious advantages. The functional units can be constructed away from the shipyard in ideal conditions and fully completed and set to work before delivery for installation in the ship. Generally the latter operation simply involves bolting the unit in place and connecting the ship's services — what we would call in the computer world of today 'plug and play'.

The Royal Australian Navy Anzac-class frigates are MEKO ships and warships built in this way have now been built for many navies around the world, including the German Navy. Since 1981 some 70 MEKO warships



Historically, the patrol frigate (FFG-7) class, of which Australia bought six ships, was also criticised in its time as being an inadequate and under-armed ship. Yet, later, the class was regarded as the benchmark for future US surface combatants, some have even proposed building a modern version in preference to the LCS. (USN)

have been built or are under construction. Similar concepts have been adopted by other countries. The Royal Danish Navy's StanFlex system was developed in the early 1980s as a way to replace several classes of small warship with a single class of multi-role ship in which standardised containers can be fitted into slots in the ship to suit particular mission requirements.<sup>ix</sup> Equipment common to all the ship's roles is built into the ship.

It is stated that StanFlex modules could be exchanged within half an hour with the ship ready to deploy within a few hours after system testing



The trimaran littoral combat ship USS INDEPENDENCE (LCS-2) deploys a remote multi-mission vehicle (RMMV) while testing the ship's mine countermeasures mission package (MCM) off the southern California coast in August 2013. The USN is buying 23 mine-countermeasure packages (at US\$97.7 million each). Austal USA photo.

— assuming, of course, that qualified and trained crew were available. StanFlex system slots have been installed on older vessels during refits and by 2012 nine ship classes were in service capable of carrying mission payloads in StanFlex modules.

Whilst this kind of modular payload design clearly has many attractions, successful application in practice depends on having a ship design which is capable of supporting the various payloads throughout the life of the ship. The ship designer has to ensure that the power generators, power distribution systems, air and water services all have sufficient capacity to support changing demands over time. Accommodation also needs to be provided for the crew to support and operate the different payloads. The adoption of a modular payload system does not relieve the ship designer of the need for 20–20 foresight to anticipate the service requirements of combat systems up to several decades ahead — a familiar challenge for warship designers. Similarly, combat system development is constrained by the need for it to be accommodated in standard modules.

Despite the success of systems like MEKO and StanFlex, navies continue to pursue traditional ship design concepts whilst still incorporating flexibility to enable a common hull to be constructed in different variants.<sup>x</sup> The British Type 26 frigate — the 'Global Combat Ship' — is another example of a ship designed for payload flexibility. Thirteen ships are to be built for the Royal Navy, a mix of anti-submarine and general purpose versions. The design will incorporate some modular payload capability. The recent decision by the Australia Government to spend about \$78 million to study the practicability of adapting the design of the Hobart-class destroyer to suit the future frigate requirement is another example of seeking to reduce design overhead and maximise production efficiencies by using a common hull for different missions over a prolonged period.

## FOCUSSED - MISSIONS

One of the most interesting, and controversial, projects to build a flexible, modular-payload ship is the US Navy's Littoral Combat Ship (LCS) programme. The programme was announced in November 2001, and it is intended to provide the US Navy with a 'relatively inexpensive' surface warship equipped with modular 'plug and fight' mission packages, including unmanned vehicles. The LCS is intended to be a focussed-mission ship, capable of performing one primary mission at any one time.<sup>xi</sup> The primary missions for the LCS are ASW, mine countermeasures, and surface warfare against small craft primarily in near-shore (i.e. littoral) waters. There are many subsidiary missions, including peacetime engagement and partnership-building operations, intelligence, surveillance and reconnaissance, anti-piracy, support of Special Forces and homeland defence.

In May 2004, two contracts were awarded for the design of two competing versions of LCS. One industry team was lead by Lockheed Martin, and one by General Dynamics, the latter team including Australia's Austal through their US subsidiary company. The two designs are quite different. The Lockheed Martin team's ship is a steel semi-planing monohull (with an aluminium superstructure) and the General Dynamics ship, designed by Austal in Australia, is an all-aluminium trimaran based on Austal's high-speed trimaran ferry design. Both ships have different combat systems.

The ships are being built by Austal USA at their shipyard in Mobile, Alabama and by Marinette Marine (a subsidiary of Fincantieri of Italy) at their yard at Marinette, Wisconsin. Prototype ships were completed by 2010. The first was LCS 1, USS INDEPENDENCE, completed on 8 November 2008 and the second USS FREEDOM (LCS 2) was completed on 16 January 2010. The first production trimaran was completed on 6 August 2012 and the first production mono-hull was completed on 27 January 2014.

The US Navy plans to maintain three LCS crews for each two ships, and to keep one of those two ships continuously underway. Under this plan the LCS are intended to be deployed for 16 months at a time with crews rotating on and off the deployed ships at 4-month intervals. Four ships are planned to be forward based at Singapore and eight at Bahrain.

The LCS programme has not been without problems. The original unit cost (for the ship, not including mission packages) was expected to be about \$US220 million in 2005 dollars; however the actual cost of the first few ships more than doubled. Costs under bulk-buy contracts subsequently dropped to about \$US450 million today dollars, about \$US380 million 2005 dollars.

## MISSION PACKAGES

The development of mission packages has also had some problems and has taken longer than planned. The US Navy is buying 23 mine-countermeasure packages (at \$97.7 million each), 21 surface warfare packages (at \$32.6 million each), 15 anti-submarine packages (at \$20.9 million each) and 59 sets of common-mission equipment packages (at \$14.8 million each). Since January 2011 changes have been made to all three mission packages as equipment selections have changed, partly driven by equipment cancellations imposed by financial limitations.

The LCS programme has been controversial due to the cost growth; design and construction issues with the lead ships; concerns over the ships' ability to withstand battle damage and questions over whether the ships are sufficiently armed and able to do their stated missions effectively. The US Navy has acknowledged some problems; while arguing that it was taking corrective action and has disputing other arguments against the program. The *Gerald R Ford* (CVN-78) class aircraft program and the



NUSHIP HOBART (D-39) on the launch platform. Multi-role describes ships like the RAN's new Hobart-class air-warfare destroyers quite well. These ships will be capable of area command and control, anti-aircraft defence and anti-submarine warfare. (AWD Alliance)

*Zumwalt* (DDG-1000) class destroyer programme have also been heavily criticised for high cost and technical risk. Historically, the patrol frigate (FFG-7) class, of which Australia bought six ships, was also criticised in its time as being an inadequate and under-armed ship. Yet, today, that class is regarded as the benchmark for future US surface combatants and some have even proposed building a modern version in preference to the LCS. Originally the US Navy intended to buy 52 LCS — 26 of each design. In April 2014 the US Navy informed the US Senate Armed Service Committee that:

“While the Navy continues to focus on the merits of LCS and the capabilities it brings to the fleet, the service also recognizes the importance of maintaining awareness of emerging threats and capabilities of our Nation’s adversaries. As a result, the Navy is examining options to increase the lethality of our small surface combatant force. Specifically, the Navy is studying existing ship designs (including the LCS), a modified LCS, and a completely new ship design, including their estimated cost, to determine the most affordable method for improving the capability of this critical element of our force. Pending the results of this study (due in support of FY 2016 budget formulation), the Navy will restrict LCS contract actions within the first 32 ships of the class.”

Given the cost of the LCS, it had been suggested that the follow-on to the LCS should be a proven modern frigate design like the Danish *Iver Huitfeldt* (a StanFlex ship) or the French/Italian FREMM.<sup>xii</sup> However, it has since been decided to improve the capability of the existing LCS designs, reclassifying the subsequent ships as frigates. Meanwhile, progress continues to be made introducing the ships into service. USS FREEDOM was recently deployed to the Western Pacific, a deployment which helped to generate considerable international interest in the LCS concept and design, and USS INDEPENDENCE recently took part in RIMPAC 2014 at short notice. INDEPENDENCE has been employed in San Diego testing the mine-warfare mission package and was given two weeks notice of her participation in RIMPAC. The change in her plans required the off-loading of the MCM package, the embarkation of a surface warfare package with 19 sailors, two 30 mm guns, a couple of 11 m RIBs and an aviation detachment with two MH-60S helicopters. The packages were transferred in 96 hours. It was also necessary to test many systems, including the 30 mm guns, which had not been used in her four years of service. That work was completed en-route to Hawaii, along with the full commissioning of the ship’s combat system.

More recently, the second of the Independence-variant LCS, USS CORONADO (LCS 4) has completed a Combat System Ship Qualification Trial including firing of her 57 mm gun against a fast attack craft as part of the lead up to the Technical Evaluation and Initial Operational Testing and Evaluation of the surface-warfare mission package in 2015.<sup>xiii</sup>



The Lockheed Martin-led team producing the flexible and reconfigurable Freedom-variant LCS includes naval architect Gibbs & Cox and ship builder Marinette Marine Corporation. Sensing that the USN’s appetite for a larger more multi-rolled ship they have provided larger variant proposals of their original LCS design. (LM)

## FLEXIBLE MISSIONS OR MISSION FAILURE?

Amongst international navies, ship designs based on modular payloads are becoming more common. One example is a design by DCN of France for a 1500 ton flexible offshore patrol vessel which can be configured as a patrol version, anti-aircraft and surface warfare version or an anti-submarine version. One can’t help but compare this ship with the original 1960s concept for Australia’s Light Destroyer (DDL).

Closer to home, the 2009 Defence White Paper included a Government decision for Defence to develop proposals to rationalise the RAN’s patrol boat, mine countermeasures, hydrographic and oceanographic forces into a single multi-role class of around 20 Offshore Combatant Vessels combining four existing classes of vessels into a single hull of around 2000 tonnes. This future offshore combatant was to be able to undertake offshore and littoral warfighting roles, border protection tasks, long-range counter-terrorism and counter-piracy operations, support to Special Forces and missions in support of security and stability in the immediate neighbourhood and would probably have embarked a helicopter or UAV.<sup>xiv</sup> The Defence White Paper of 2013 scrapped this plan, stating:

‘a modular multirole vessel remains a possible longer-term capability outcome, subject to technological maturity and an ability to provide operational flexibility with lower costs of ownership. In the shorter-term, Government will seek to replace the current Armidale Class patrol boats with a proven vessel to ensure that Defence can continue to provide a patrol capability. Similarly, Government intends to upgrade and extend the existing Mine Hunter Coastal and Survey Motor Launch Hydrographic vessels until the longer-term solution can be delivered.’<sup>xv</sup>

Considering the many challenges facing the RAN and the Department of Defence in managing current and future projects, this change of heart is perhaps understandable. The Defence White Paper of 2015 may reveal more about the shape of future RAN ships but it is highly likely that the future will include some ships with modular payloads, if the trends evident overseas are a guide.

Will the multi-role/flexible warship be the way of the future? Adoption of the *flexible* modular-payload design concept requires consideration of much more than ship design. For example, a modular payload securely maintained at HMAS WATERHEN in Sydney is of little use to a ship which needs it if that ship is in the Persian Gulf. Design of these future systems must include consideration of complex logistics including air-transportable modular payloads. Nevertheless, increased *mission flexibility* will be a feature of many future warship designs. ■

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# 2015 CRESWELL ORATION

## A REASONED MAN FOR ALL SEA-SONS AND DAUGHTERS

By Rear Admiral Stuart Meyer CSC, RAN

**This year's well attended Creswell Oration, organised by the Victorian Division of the Navy League of Australia, featured the Current Fleet Commander Rear Admiral Stu Mayer CSC and Bar RAN. The following is a reproduction of his speech delivered to the assembled guests on the day.**

In February 2014 the former Chief of Navy Ray Griggs asked in a speech at the University of Sydney, Centre for International Security Studies (CISS), Q Symposium: "Does our national outlook allow us to meet the geo-security challenges of the Indo-Pacific?" This was—and remains—an important question, and I am not sure that he received an answer. At the heart of this question is the recognition that a nation's sense of itself determines the way it interacts with its environment.

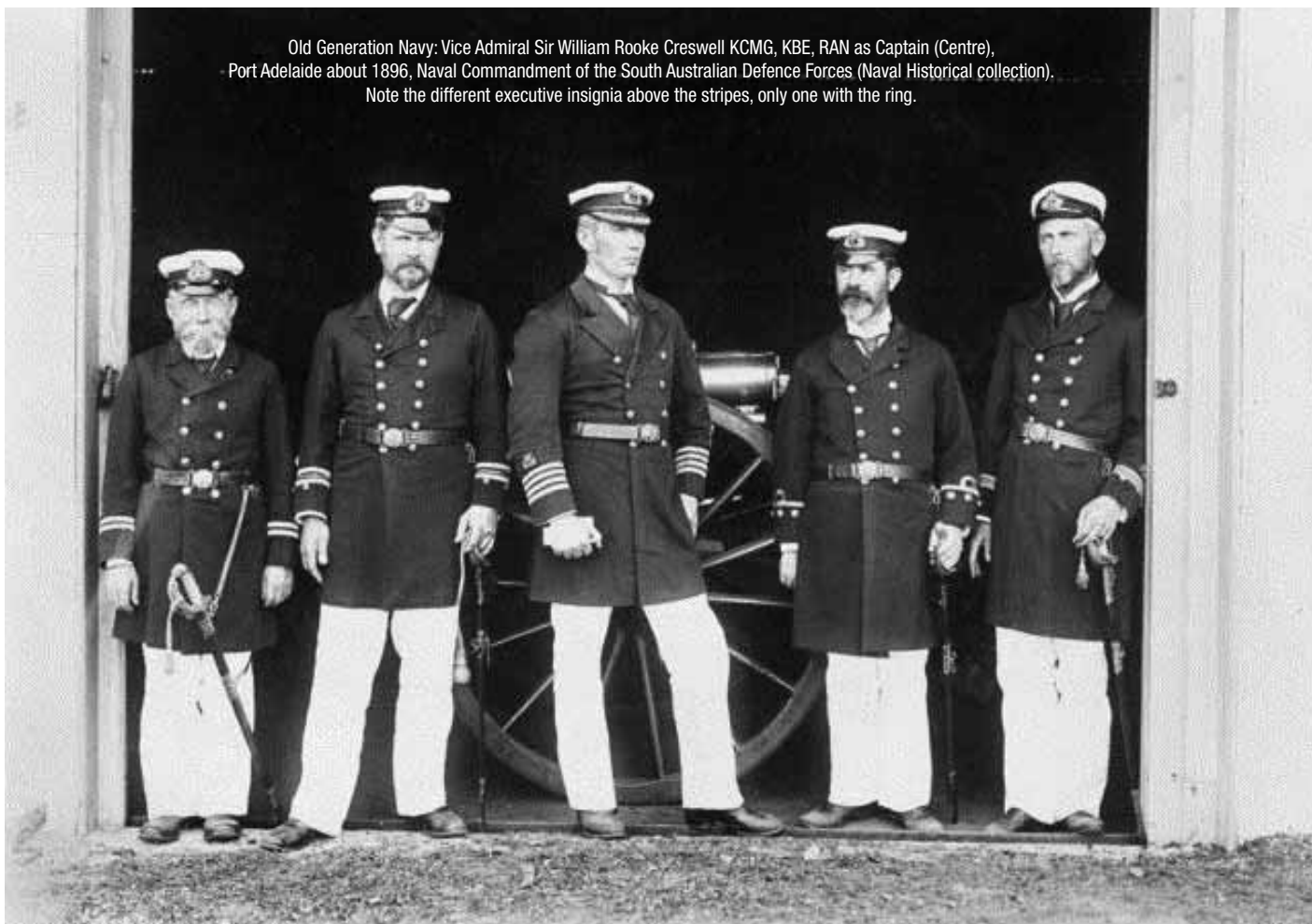
In Australia's case I would argue that we have a sense of cognitive dissonance about ourselves. We see ourselves as landsmen, shaped by the poetry of Patterson, by the notion of the outback and the legend of the Digger. For some of this image there is good reason; with an economy that first rode upon the sheep's back, and more latterly along the iron ore highway, and for generations of Australian's

that have travelled through country towns with memorials dedicated to our fallen soldiers, our sense of the land is acute. But for all the poignancy of these images they fall short in explaining the reality of Australia as a nation.

In the same speech at Sydney University, Griggs observed:

"Australians have for over a century been obsessed with whom we are and where we sit both globally and regionally. Why is it then that as a nation we seemingly cannot come to grips with a really big but very basic idea – that Australia is an island, a maritime nation, one that is utterly dependent on the sea for its prosperity and security? Why is it then that our national anthem would be more reflective of our true national outlook, if it said that we were girt by beach, rather being than girt by sea?"

Old Generation Navy: Vice Admiral Sir William Rooke Creswell KCMG, KBE, RAN as Captain (Centre), Port Adelaide about 1896, Naval Commandment of the South Australian Defence Forces (Naval Historical collection).  
Note the different executive insignia above the stripes, only one with the ring.



AUSTRALIAN WAR MEMORIAL

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Vice Admiral Ray Griggs, then Chief of Navy, in discussion with Professor James Der Derian at the Inaugural Centre of International Security Studies, Q Symposium, February 2014. (Photo CISS / Sydney University)

In recent year others have expressed similar sentiments: Professor Mike Evans has characterised Australia as a maritime nation with a continental culture and Michael Wesley opines that we lack a maritime imagination. For me this strategic disconnect is at the core of any consideration we may give to the issue of geo security from an Australian perspective. But this is not a new idea; in fact the same sense of misplaced identity was at the core of the struggle that Creswell faced as he argued for the resources to establish a credible naval force. There are many parallels with the discussions about naval force we have today, and those which Creswell pursued at the start of the last Century. While the technology may have changed – and in some cases may not – the strategic realities and the sea blindness of those that have not looked beyond the beach have not. While we like to think our strategic debate is more nuanced and sophisticated, the reality is that in so many ways it is the same old wine, just in a newer wine skin.

## REIMAGINING

Sea lines of communication remain the lifelines for Australia's prosperity. The wealth of our nation in the early 1900s was generated through wool and wheat - today it's the mineral boom. I can sense many of you think the term boom is behind us, but in reality what has changed has been that the rate of growth has declined not the market itself, and with slow decline in the value of the dollar the mining sector remains—and the sea lines that enable it—as important now as any time in the past decade, and our economic success remains dependant on shipping for exporting our produce to the world's markets. The vast majority of our imports also arrive by sea. Again this is nothing new, Creswell observed caustically in a 1902 parliamentary report:

"The spectacle of some five million Anglo-Australians, with an Army splendidly equipped, unable to prevent the burning of a cargo of wool in sight of Sydney Heads, is only the ordinary consequence of a policy of naval impotence."

While the description of us as Anglo-Australians is no longer apt, and nor would I seek to describe our naval policy in the same way, the

importance of trade to Australia is perhaps more acute than it was for the Australia of the last century. And, while our population may consider itself "girt by beach", our economy does not have this luxury; it is inextricably linked into the world economy and it depends for its health upon the free flow of goods. A trend that is only increasing:

- We no longer hold reserves of basic commodities, preferring to rely on 'just in time' shipments of consumer goods and fuel to keep our economy running. A blockage in any of the main arterial routes that supply Australia will ultimately lead to an immediate and profound impact on the quality of life of everyone here at home.
- Australia is part of a global commons and this being the case we cannot find our security at home, we must deliver it over the seas on which trade flows. We will achieve this by being part of a rules based global order where the movement of trade is unimpeded, and Australia can pursue its place as part of a wider global trading system.

Today as we sit together and enjoy this lunch the crew of HMAS SUCCESS are doing their bit in contributing to this outcome. Deployed to the Middle East Area, SUCCESS and the 58 previous rotations of RAN warships to the region are helping to build the sort of stable environment upon which world trade depends. Through the Red Sea and Bab Al Mandeb and into the Indian Ocean; along the coast of Somalia and Oman, the crew of SUCCESS does her bit in keeping the promise made by Creswell all those years ago; a Navy can and will keep the trade routes alive.

But before moving off this theme perhaps you will let me boast a little on our achievements. The waters off the Gulf of Aden witnessed 226 piracy incidents between 2009 and 2013. The joint efforts of Navies in the region however reduced the number of such incidents to just four in the first half of 2014. Somali waters witnessed 435 piracy incidents in the five years (2009-2013), while three incidents were reported in the first half of 2014. These numbers indicate the very successful campaign that has been waged by the CMF, NATO, EU, and yes by Japan, Iran and China – all of whom who have acted in their national interest to protect trade.

## IN THE NATIONAL INTEREST

Creswell saw the importance the Navy would play in protecting trade and national wealth before we had completed our first deployment; indeed one of the first CNF deployments he oversaw was not a combat deployment, but a policing one in the North West region of our country. His statements about the critical role of the Navy in protecting trade and in a wider sense the national interest, in 1902 resonate as strongly now:

"In 1905 and 1906 Captain Creswell wrote to the new Australian Government on the requirement for an Australian Naval Force and the capabilities needed in its ships. He supported his case with a strategic assessment that "For a maritime state unfurnished with a navy, the sea, so far from being a safe frontier, is rather a highway for her enemies; but with a navy, it surpasses all other frontiers in strength".

Creswell was a persistent agitator for the Navy. His argument did not vary. Australia's strategic reality dictated that the young nation would need to be able to defend itself upon the sea. But if nothing else, the history between 1905 and 1909 shows the importance of three things; have a consistent and clear message, build understanding with the political leadership—of whatever shade—and seize opportunity when it presents itself. He was also a master in telling the Navy story. It was not complex, it wasn't alarmist, but it was, however, based in a realistic understanding of the strategic environment. Unlike those that argued the security of the nation could be sub contracted to the Royal Navy, in 1909 Creswell observed:

"should war occur and the Imperial Squadron be ordered to rendezvous elsewhere, the Commonwealth will be naked of sea defence. The whole trade and business life of the Commonwealth, property worth many millions, will be at the mercy of any raider, even of the weakest, which would be able to carry out any of [a number of attacks] with the most perfect impunity, and it must be kept in mind that not one penny of the present expenditure on defence will avail to prevent it,"

When we look at what it is that Navy does today we have the same challenge to address. Our region is undergoing tremendous change. The growth of nations such as China and India, the stop start resurgence of Japan and Russia and the growth of 'next tier' nations all present a challenge to the security in the region. It's not that any one nation presents an immediate challenge to Australia or our interests; it's that the regional architecture needs to shift in recognition of changes in relative power, influence and needs of the nations concerned. Change creates an uncertainty that we have legitimate interest in managing.

The other more subtle change in the way powers that are acting in our region is that they are increasingly acting in the maritime domain. The resources they seek, the sea lines they want to protect are all in the oceans of our region and the biggest developments in their investments is in two areas; maritime capabilities and in cyber. The challenges of the time of Creswell are just as acute today. If we seek to influence the outcomes of the changing environment we need to do it on and around the sea. In this way a Navy plays a vital and enduring role.

## CRITICAL STRATEGIC THINKING

"Australia has a unique challenge: we have to go 4000nm to have an influence and 4000nm beyond that to have an affect. And, since the projection of power for a maritime nation was, is and always will be from the sea, [these will be] the immutable facts upon which our future Knowledge Enterprise Economy (KEE), security and defence will rest."<sup>1</sup>

Creswell was perhaps our first strategic thinker to champion the need for self-reliance. Not to act alone by choice; but rather to act in the national interest un-beholden to the movement of the Imperial Squadron. The defence of the nation was then and remains now a sovereign issue. While it can be tempting to defray the cost in the expectation that someone more powerful will defend you on the basis of common interest or allegiance, ultimately this would involve a risk that should not be borne. The story of the Navy that Creswell championed was outward looking, engaged and proactive. It was about looking at the challenges in our region and knowing that a sovereign capability to control the sea approaches to Australia was vital.

One of the implicit assumptions that has guided our strategic thinking, has been the distance Australia is from points of contest. These distances are shrinking rapidly. Whether it is in the increasingly interconnected economies, the importance of cyber sovereignty or in the sheer physical congestion of the naval deployments, Australia is no longer remote. Last year's deployment of the Russian Navy to the Coral Sea, as well as a number of other less reported deployments in our immediate region, indicate that we are no longer out of the way – the distance is just not great.

The second thing that Creswell did particularly well was influence the decision makers. I would love to tell you that I can decide how many frigates we should have – more than 12 – or perhaps where tankers or submarines should be built; however these are rightly decisions of the political leadership. Creswell understood this and he was particularly adept at bringing these political leaders around to his concept for a modern Navy. Between 1905 and 1910 there were four Prime Ministers, although Deakin was there twice, and five Defence Ministers. Few of these came with a background in Defence or of naval matters, but each was charged with the authority for the decision that needed to be taken – a brave decision that no other Dominion was prepared to follow – to form a Fleet unit. Creswell was able to achieve results through his ability to engage with and create conviction in the political leadership. A rare skill, and one which has just as important role today.

The reason that this challenge is so profound is that you are working against a land centric culture, and trying to get government to invest in a capability in competition with other social needs that are more immediately relatable. It is far easier to build a case for a hospital

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Lieutenant Melissa Loadsman RAN on the HMAS CANNBERRA / NUSHIP ADELAIDE bridge simulator at HMAS WATSON. (RAN)



political leadership is less important than stability in political commitment to a credible Navy. It had been a difficult path, but the foresight of men like Creswell, Deakin and Fisher was amply rewarded in 1914 when the powerful German East Asiatic Squadron was decisively deterred from carrying out its plans for cruiser warfare in the Pacific. But for the Navy, wartime Prime Minister W.M. 'Billy' Hughes later declared, "the great cities of Australia would have been reduced to ruins, coastwise shipping sunk, and communications with the outside world cut off".

The final element is the ability to seize on the main chance. When opportunity presents you must be able to respond. The 1909 Imperial conference and the argument of Jackie Fisher created a moment in time and in the response to this opportunity. This means the ground work needs to be completed and the people need to be positioned to respond with agility.

than it is to invest in a new land attack missile. The process of building maritime awareness is an ongoing one, and it can only be helped if we have a clear and consistent message.

Much as the naval purist would prefer it, Defence needs to deal in a political world – a world full of changing governments, changing priorities. The importance of a well-educated political leadership, of both sides is critical. Navy need to have bi-partisan support, and that support needs to be sufficiently robust that financial support continues even in austere financial climates. But equally when the financial climate is austere we need to shape our expectations accordingly. Creswell understood the criticality of this and Navy needs to help develop political minds that are maritime aware – for us stability in

## NAVY FUTURE, NOW

Berthed at Fleet Base East is the largest warship to ever serve in our Navy. The 27,500 tonne HMAS CANNBERRA III. My first dealing with that ship was in 2001 – and it took almost 13 years from concept to commissioning. By contrast the period between 1905 and 1913 to deliver a Fleet Unit appears like the very acme of agility. Each idea will have a time that it can come to fruition and we need to be ready to seize it as they appear. CANNBERRA is a wonderful new capability for the Navy, the ADF and the nation. It is some of the things that are new for us, but perhaps for some of the veterans here it is less so new for you. We are looking forward to welcoming ADELAIDE to the Fleet later

HMAS CANNBERRA entering Sydney Harbour for Fleet Base East. (Chris Sattler)



in the year and in the years to come we will see the Air Warfare Destroyers and new replenishment ships.

For the next few years we will re-learn the art of operating in task groups, typically based around one of the LHDs and we will increasingly harness the full potential of a Joint force operating in a maritime domain. As ever our strength will be in the quality of our people. For those that lament the failings of the current generation, all I can say is come and see our men and women, they make you proud to be Australian, and proud to be a sailor.

Increasingly we will take advantage of simulation to prepare our people to the highest possible standard. I believe our use of simulation is potentially the fulcrum by which we will affect the strategy to deliver on our potential as a Fleet. Rather than using our ships as floating classrooms – a role that I neither have the luxury to pursue, or the desire noting its debilitating cultural effect. Simulation will provide the means to unstick congested training pipelines and achieve the intensity of training we need. Perhaps you will allow me to provide you two examples of why this is important:

- The first is in the preparation of our young warfare officers. In the past they earned their credentials by standing on the bridge and moving from notebook to chart and finally to pelorus for the final test. Now they will achieve what used to take 9 months in about 4 months by being posted as a class to the Gatacre – or perhaps what you better know as the Bridge Simulator. Operating this simulator as a concentrated training environment, officers watchkeep in the Gatacre in sea watches and experience a progressively demanding series of challenges mentored by former navy Commanding Officers and current navigators. This training is challenging, intense and realistic, with the net result of us producing more officers to a higher standard in less than half the time. We are in the process of rolling this training out to medical, engineering and aviation communities and we will actively seek more opportunities to continue this program
- The second example is in the way that we train our ships. A typical threat to our ships involves a weaving cruise missile that travel at 2-4 times the speed of sound and in the terminal phase is less than 12 m above the surface of the ocean. This weapon will have more kinetic effect than a cruisers broadside when it hits.

To train against live targets that replicate this capability would not only be cost prohibitive, it would be dangerous in and of itself. Through simulation we can link ships alongside and at sea—in our Navy as well as those of key friends—and expose them to the sorts of contemporary challenge they will face if called on to go in harm's way. Only through simulation can this be achieved. Hopefully you might agree that this new approach is indeed an important one, it is not cheap or simple, but it is transformational. But even that being the case it is still doing that which Creswell sought to do all those years ago; equip the Fleet with properly trained and experienced people, able to defend Australia's national interest on the high sea.

We pay homage to Admiral Creswell by calling him the 'Father of the Australian Navy'. Many of the issues he dealt with over a century ago remain relevant, and many of the processes he put in place remain today, albeit with different titles. The concept of self-reliant Defence of Australia, the importance of trade, the need for a strong Navy in an uncertain world, and while I haven't spoken about it today,



Rear Admiral Stu Mayer CSC,  
RAN speaking at a Legacy  
Week function. (RAN)

even his commitment to a domestic shipbuilding industry all have a familiar ring.

One of my sons bought me a coffee cup a couple of years ago with the saying 'the older I get the smarter my parents seem to be'. I don't know if it was a confession or a joke. However, the longer that I serve and the more I understand this profession of the sea the more I come to esteem those that went before me. The core elements of the naval service are enduring – why Australia needs a Navy is a constant. The uniforms may have changed – the ships may be larger, but the mission remains the same. We defend Australia beyond the sight of the shore, we create the conditions by which all Australians prosper and we do so as an independent and sovereign Navy – excited by our future, but indebted to those that shaped our past.

If the young Royal Australian Navy ever had need of a Vision Statement when it formed then I am sure the one Creswell would have established would have been *To Fight and Win at Sea* – just as it is today. Creswell is not a parent listening to outdated music or wearing shirts with overly wide lapels—an image I must convey to my own kids—but a parent whose common sense and vision has endured – his vision and message is eerily contemporary. We may have put the substance in new packaging, but it is the same old wine, just in a new wine skin. ■



## 01 NEW DDG HOBART LAUNCHED

The first of the RAN's new destroyers, NUSHIP HOBART, was launched at the ASC shipyard in Adelaide on 23 May. A crowd of nearly 6,000 people gathered at Techport Australia to celebrate the launch. Chief of Navy Vice Admiral Tim Barrett, along with the Governor of South Australia his Excellency the Hon. Hieu Van Le and the Minister For Defence the Hon. Kevin Andrews, MP attended the lowering-launch. Vice Admiral Barrett Chief of Navy said the launch was a significant day for the Navy and Australia, stating:

"When that ship is the first of class, it is a momentous occasion...On her launch day; she is no longer just inert steel in an industrial site. She has reached the point in her construction when she no longer belongs ashore."

CN added:

"The fleet that NUSHIP HOBART will eventually join, is growing in size, in strength, in agility, in intelligence and in lethality. The introduction of the DDGs will significantly increase Navy's ability to contribute to an integrated joint mission for air and missile defence."

HOBART's launch is a big step forward in the delivery of three next-generation warships to the RAN. Over the coming months, progress will be accelerated as the second destroyer, BRISBANE, takes the place of HOBART on the hardstand to undergo final block consolidation, and the keel for the third destroyer, SYDNEY, is laid. The AWD Alliance is responsible for delivering three Hobart class DDG destroyers and their support systems to the

Navy. The Alliance is made up of shipbuilder ASC, mission systems integrator Raytheon Australia and the Government's Defence Materiel Organisation.

## 02 USN'S 'FUNNIES'

The recent Culebra Koa 15 (CK 15) exercises off Hawaii proved an opportunity to shake down before two of the US Navy's newest and potentially most novel (as in Churchill's funny's) ships get deployed.

The first ship, USNS MONTFORD POINT, is a Mobile Landing Platform (MLP) which has a large ramp that connects to a variety of other ships that would normally unload cargo at a dock. The Mobile Landing Platform is a new concept, part of the Maritime Prepositioning Force of the future. It is effectively a floating jetty within the sea basing concept, not dissimilar to the D-Day Mulberry Docks concept.

The other ship deploying (with the USNS MERCY, a hospital ship for Pacific Partnership), post work-up was USNS MILLINOCKET. Both ships will support humanitarian assistance/disaster relief (HA/DR) – Prevent and Recovery – missions fundamental to building peacetime trusts and shared awareness in the Pacific Region. A role that the RAN, with its new Amphibious capabilities and capacity (in the form of the two LHDs and HMAS CHOULES), can similarly support.

Built by Austal, USNS MILLINOCKET is the third of the USN's Joint High Speed Vessels (JSHV). She is similar to high-speed ferries used around Australian and European coasts and the Hawaiian Islands.

An argument is that these designs do not go

far enough. A more revolutionary concept would be to use Austal hi-speed vessels as flexible / versatile multi-role type platforms – modularised as MCMs, Hydrographic vessels, frigates or destroyers. Similarly, to take the 'perfectly adequate' Mobile Landing Platform designs and modularise it into a LPD – potentially by enabling the ship to flood down (as per heavy lift ships) and allow LCUs etc. to simply float off the deck (without the need for a dock)?

## CHINA BUILDING HEAVY-LIFT SHIPS FOR NAVY

In late May, photographs from the Wenchong shipyard in Guangzhou appeared to show a dual-use (civ-mil) design, heavy-lift, semi-submersible ship, painted in PLA Navy grey. A Mobile Semi-submersible Platform (MSP?), it is about 180m long x 33m beam; with a displacement in the region of 5,000 tonnes – three-quarters the size of the MONTFORD POINT. Its application appears similar to 2008/9 UK Versatile Modular System (VMS) design concepts.

## 03 PAKISTAN TO BUY 'EIGHT SUBMARINES' FROM CHINA

The Pakistani government has approved the purchase of eight new submarines from China, senior Pakistan Navy officers told the National Assembly's defence committee on 31 March.

In 2011, Pakistan reinforced its 'tilt towards China'; revealing that the Navy had begun discussions with China to buy six submarines, with the number of platforms subsequently raised to eight. Apparently

**01** The first of the RAN's new destroyers, NUSHIP HOBART, just before being lowered into the water at her launch at the ASC shipyard in Adelaide on 23 May. (AWD Alliance)





these discussions began after the Pakistan Navy turned down the purchase of three submarines from Germany on cost grounds. Navy officials neither revealed the type of boats to be ordered nor a price. A Pakistani Foreign Ministry official told the UK Defence publication *Jane's* that while he did not know which platform would be supplied to Pakistan, "in the recent past, there have been reports of discussions for the Type 041 submarines".

The Type 041 Yuan class is a diesel electric attack submarine (SSK). An export version, marketed as the S20 and unveiled in February 2013, displaces about 2,300 tonnes. It is understood that the Indian Navy is paying US\$763 million per boat for six DCNS Scorpene SSKs, compared to apparently not less than US\$500M per S20.

### ISRAEL'S DOLPHIN CAPABILITY UPGRADE

Israel has upgraded the weapons and communications systems of its first three German-manufactured Dolphin class submarines to bring them up to the same standard as its three newer submarines, which have air-independent propulsion systems.

While the submarine hulls and (back-end) propulsion systems have been built in Germany, Israel insists on fitting out the submarines at its Haifa naval base with its own (front-end) command, weapons and communications systems – thus retaining both secrecy and high-tech skills 'in country'.

Israel-US technical cooperation is highly protected; necessitating closed protocols and systems protection in design, testing

and evaluation to avoid IP / knowledge leakage. Building modules and fitting out in Israeli yards also has specific technical advantages – not dissimilar to proposals for building and fitting out Australia's Future Submarine. Israel's second AIP submarine is due to arrive at Haifa in the coming months.

### SSN CONVERTED INTO SYNTHETIC TRAINER

The USN is converting the first of two Los Angeles-class fast-attack nuclear-powered submarines to provide for synthetic (combining virtual and physical) training opportunities.

USS LA JOLLA (SSN-701) arrived at the USN's Norfolk Naval Shipyard in Portsmouth, Virginia, for the three year conversion. Its hull will be cut and integrated with three new synthetic sections from General Dynamics Electric Boat.

This is part of a USN training upgrade; replacing existing moored training submarine capabilities in Charleston and South Carolina, where nuclear operators are also trained and qualified.

LA JOLLA's sister boat USS SAN FRANCISCO (SSN-711) will become the second trainer, due to commence conversion in 2017.

### SUCCESSOR SUBMARINE DESIGN WORK EDGES TOWARD PRODUCTION DECISION

Continuing its spiral-development procurement process, the US-UK company BAE Systems Maritime – Submarines, has been awarded additional assessment phase funding by the UK MOD to cover 'main-gate' final design activity for the Successor

deterrent submarine, pending Treasury approval in 2016.

Unlike previous deterrence force funding, as for VANGUARD-Trident, funding for Successor is to be found from within the existing Defence / Navy vote.

The Successor nuclear-powered ballistic missile submarine (SSBN) programme is due for delivery in 2028: its purpose is to maintain the UK's continuous at-sea strategic deterrence.

The programme commenced in 2007 on transition from the Blair to the Brown Labour Government under a joint team from the BAE Systems, Babcock, Rolls-Royce, and the UK MOD. Approval was given at 'initial gate' in May 2011 to proceed to 'main gate', in 2016.

Recent MOD reports to Parliament indicate 'good progress'. Long-lead items have been ordered for the Successor programme; including for the pressurised water nuclear reactor propulsion and weapons handling and launch systems.

Strategic Nuclear Deterrence is a weapon of first and last political choice, bequeathed to the Royal Navy for 'safe keeping'.

However, there is growing doubt that the programme will ever deliver, due to: the results of the 2015 election in Scotland; continuing downward pressure on UK Defence spending; the state of British engineering and its civil nuclear industry (much imported from France); lack of expert and knowledgeable politicians / public servants / research; and, the state of engineering / the engineer corps in the Royal Navy.

02

During post-delivery test and trials the Military Sealift Command mobile landing platform USNS MONTFORD POINT (MLP 1) (left) completes mooring operations with the Spearhead-class joint high speed vessel USNS MILLINOCKET (JHSV 3). (USN)



## ADMIRAL CLAIMS BRITISH NAVY BROKEN DOWN

Vice Admiral Simon Lister RN claimed earlier last year that there were 'not enough sailors, ships were ground to a halt and that the service was littered with second-rate equipment'.

He indicated that ongoing defence reviews (a euphemism in UK MOD-speak for cuts) have left the RN with 'broken-down ships and demoralised crews; overly-reliant on civilian contractors to repair ageing vessels'. Lister blamed Government spending cuts for undermining the Navy's ability to carry out its duties, noting:

- On a recent mission, there were not enough sailors able to use the Type 23 Frigate's towed sonar array – needed to track Russia's nuclear submarines.
- Ships grind to a halt at sea because no time is set aside for basic maintenance before they sail – and when problems arise, crews are incapable of finding or fixing the faults. Officers don't receive necessary training and rely on civilian consultants to solve technical problems, causing a drain on skills.
- Budget constraints mean the Navy buys second-rate equipment.

Lister noted that the price of unrelenting operational tempo is unsustainable pressure on engineers as every opportunity for maintenance is squeezed out of busy programmes. He gave as an example the lack of operators trained to stream and recover Type 23 towed sonar, necessary to safeguard the UK's strategic deterrence

force and maintain second strike.

He observed that overall material readiness continues to decline and that the numbers of submarines at readiness have been driven low by late delivery of Astute and platform ageing.

Admiral Lister also criticised a churn and outflow of staff, which was coupled with 'reduced training investment and increasing transfer of engineering responsibility to contractors'. UK MoD commented: 'the Admiral is merely pointing out the obvious facts given the shortage of engineers across the maritime industry'.

## US 2ND STRIKE POLICY AT RISK DUE TO UK'S FAILURE TO MAINTAIN DETERRENCE FORCE

In the May UK General Election, 95% of Scottish MPs were elected on a nationalist ticket that included the removal of the UK's nuclear ballistic submarines (SSBNs) from HMS NEPTUNE (Faslane).

The loss of Trident Submarines would put significant pressure on the UK remaining as one of the five permanent members of the UNSC – something it is known Russia (amongst others) has been pushing for should Scotland secede.

At its simplest, the matter is one of standards of seaworthiness and UK Deterrence Forces being shipshape. It is thought the RN is struggling to model and adhere strictly to policies and procedures. These cannot only be ruthlessly effective (cash-generating even), but most importantly, they allow those implementing them to do bigger and better things, knowing that they can cope in

a crisis when pushed – and they follow due process. This is the core rationale of RAN's Maritime Safety Bureau.

However, the matter may be much more serious. Without conventional Armed Force capabilities, Maritime Air Patrol and the Frigate ASW forces (used to track, patrol and protect Britain's Deterrence submarines), the UK cannot maintain 2nd Strike Policy. In which case, the UK may be placing the US (and France) at risk through its lack of a secure Deterrence posture.

## 04 FRANCE'S CAÏMAN HELICOPTER TO BE APPLIED IN ASW ROLE

The Marine Nationale (French Navy) has achieved Initial Operating Capability (IOC) with the NHIndustries' NH90-NFH (NATO Frigate Helicopter) Caïman Marine maritime helicopter in the anti-submarine warfare (ASW) role.

France ordered 27 Caïman Marine aircraft, to replace the Lynx and Super Frelon helicopters, together with 14 ASW mission suites. The second phase, Step B, qualifies the aircraft weapon systems (including radar, sonics, and stores release) to deliver full operational capability in the ASW and anti-surface warfare (ASuW) roles.

A Caïman Marine helicopter is currently operating from the French Navy's Forbin-class air-defence destroyer CHEVALIER PAUL, supporting the CHARLES De GAULLE (R91) Carrier Strike Group / Operation 'Arromanches' in the Arabian Gulf.

The primary role of the NFH version is autonomous anti-submarine warfare (ASW) and anti-surface unit warfare (ASuW),

03 A Chinese Type-039A, similar to the Type 041 ordered by Pakistan.





mainly from naval ships. These aircraft are equipped for day and night, adverse weather and severe ship motion operations. Additional roles include anti-air warfare support, vertical replenishment (VERTREP), search and rescue (SAR) and troop transport. France are splitting their purchase between the "NFH version combat" costing 43.3m in FY2013 and the "NFH version soutien" (support) at 36.4m in FY2013.

### PARIS HAS MORE INFLUENCE IN WASHINGTON THAN AT ANY TIME SINCE THE 1950S

US/UK commentator Jonathan Foreman reported in May 2015 that 'Britain's NATO allies were horrified by the debacle of the 2010 Strategic Defence and Security Review', described by *The Guardian* newspaper's defence correspondent as "an embarrassing and unseemly shambles." Few foreign observers could understand the logic behind the rush with which the country's only aircraft carrier was scrapped and all the Royal Navy's and RAF's Harrier jets were sold off at fire-sale prices to a bemused but grateful US Marine Corps. US officials have publicly expressed worry about the British defence cuts and the likelihood that the UK is ceasing to be a "full spectrum" ally able to deploy a division-sized force alongside American troops in a future conflict. They included Robert Gates and Hillary Clinton, Chief of Army Staff Ray Odierno and President Obama. A month before the general election, the Chancellor of the Exchequer indicated that UK defence spending will likely drop below 2 percent of GDP mandated for NATO membership.

According to Foreman, US military, despite its affection for and ties to the UK's armed forces, increasingly sees France as its primary partner abroad. Paris has more influence in Washington than at any time since the 1950s, despite the French economy. It is also reaping the other benefits of being perceived as Europe's leading military power — including the sale of Rafale jets to Qatar, India and Egypt. Having recently opened a Naval base in Abu Dhabi, France can protect its cargo ships in the Strait of Hormuz and has apparently recently offered to do the same for the UK?

### MIDGET SUBS FOR THAILAND

Hyundai Heavy Industries of Korea has offered to the Royal Thai Navy (RTN) the HDS-500RTN submarine.

The HDS-500RTN submarine is a midget platform custom designed for Thailand's shallow-water requirements, specifically in support of its South China Sea possessions and as a counter to Chinese claims.

The HDS-500RTN originates from the submarine concept programme, KSS-500A under South Korea's Agency for Defense Development. The KSS-500A 37m design is intended to form the basis for a replacement for the Republic of Korea Navy's two 30 year-old Dolphin-class (Dolgorae) midget submarines

### 05 MALAYSIA UPGRADES KEDAH-CLASS CORVETTES FOR ASW

The Royal Malaysian Navy (RMN) has confirmed plans to upgrade four of its Kedah (Meko 100 RMN)-class corvettes for anti-submarine warfare (ASW) operations.

The intention is to upgrade the four vessels with torpedo launchers, towed array and hull-mounted sonars, and equipment to support the operations of ASW helicopters. The changing emphasis on naval force structure designs appears aimed at strengthening Anti-Submarine Warfare capabilities noting the similar emphasis being placed on this by other regional players.

### PROJECT 15B DESTROYER LAUNCHED BY INDIA

INS VISHAKHAPATNAM, the first of four 7,300-tonne Project 15B guided missile destroyers, was launched at Mazagon Dockyard Limited launched in Mumbai on 20 April. The ship is due to be commissioned in July 2018, with follow-on platforms at two year intervals to 2024. The overall programme cost is estimated at US\$5.0 bil. VISHAKHAPATNAM represents development of the Project 15A class, including: the relocation of its sonar to the bow from the hull; design of main radar mast; reshaping of the hull for stealth; a rail-less helicopter traversing system; IAI-Elta-designed EL/M-2248 Multi-Function Surveillance Threat Alert Radar (MF STAR – to be fitted) for guidance to 32 Barak-8/NG 70km range air-defence missiles.

MF-STAR is claimed to be capable of simultaneously tracking multiple seaborne targets up to a distance of 25 km and fighter aircraft up to 250 km away.

The Barak-8/NG, under joint development by Rafael-IAI and India's Defence Research and Development Organisation was successfully tested in Israel in November 2014.

**04** A Marine Nationale (French Navy) NH90-NFH (NATO Frigate Helicopter) Caïman Marine maritime helicopter. The type has just achieved IOC for the ASW role. (Marine Nationale)



Its principal weapon will be eight BrahMos anti-ship cruise missiles, co-developed with Russia. A test-firing of Brahmos was conducted in India, this January.

Continuing a global move back to Naval Gunfire Support, in January India's Ministry of Defence approved a \$250M procurement of 13 127 mm guns. Oto Melara was the sole bidder with its 127 mm/64-calibre gun along with its precision-guided Vulcano round. It is understood that BAE Systems is considering re-offering its 127 mm/62-cal Mk 45 Naval Gun System, should a re-submission of tenders be requested.

Although over 60% of the ships systems and steel are locally sourced, key components – including its four Ukrainian-built Zorya-Mashproekt DT-59 gas turbines, and Russian propellers and shafting – are from abroad. Given tensions between some of its principal suppliers this is likely to pose some end-to-end challenges. This is also occurring at a time as India continues to develop INS KADAMBA, its new West (Arabian Sea) facing naval base at Karwar in the south Indian state of Karnataka

#### **LAST TWO FREMM FRIGATES FOR ITALY**

The Italian Navy has ordered its final two Fregata Europea Multi-missione (FREMM) Carlo Bergamini-class frigates to complete its acquisition programme for 10 vessels. According to a press release from the builders, Orizzonte Sistemi Navali – a joint venture between Fincantieri and Finmeccanica, the total value of the contract for the two vessels is US\$820 Million. The vessels are to be built in the General

Purpose (GP), or anti-surface, configuration for delivery in 2020 and 2021.

The CARLO MARGOTTINI, the second ASW FREMM, has just begun its final works period and the third ASW vessel, CARABINIERE, should be delivered to the Italian Navy by the end of April.

The fourth ASW FREMM, ALPINO, was launched in December 2015. The second GP FREMM, LUIGI RIZZO, is expected to be launched in February 2016 and the seventh GP FREMM was laid down in October 2014.

#### **BOEING DEVELOPING EXTENDED RANGE HARPOON**

Boeing is said to be developing a kit to upgrade existing Harpoon Block II missiles for extended range, in the hope of attracting interest from the USN's new frigate programme.

Called Harpoon Next Generation, the new version would include a more fuel-efficient engine, additional fuel, and a smaller 300-pound class warhead, company officials told reporters at the Navy League of the United States Sea-Air-Space symposium in National Harbor, Maryland.

"We're looking at doubling the range of Harpoon from 67nms to 134nm," said Jim Brooks, director of cruise missile systems weapons programmes for Boeing Global Strike Weapons and Missile Systems, a division of Boeing Defense, Space and Security.

Existing customers, such as the USN and 27 international partners, would be able to upgrade their Harpoon Block II inventory with the kit, which could be supplied to a

customer's depot for installation, or the customer could opt to have the kit installed by Boeing.

So far, the Boeing has delivered approximately 7,500 Harpoon Block II missiles.

According to USN data, the unit cost for a Harpoon Block II is US\$1.2 million. Boeing officials said the cost to upgrade to the Harpoon Next Generation is competitive, and that customers can choose to retrofit their existing inventory or opt for the new missiles to be built from scratch.

The kit is expected to be ready in 2018, officials said, and the team is working towards a possible demonstration of the improved missile in 2016 for the USN.

#### **RAYTHEON, & KONGSBERG WORK ON NSM**

Raytheon Missile Systems and Kongsberg Defence Systems have strengthened their offensive anti-surface warfare (OASuW) programmes after signing a teaming agreement for Kongsberg's Naval Strike Missile (NSM) surface-to-surface anti-ship guided weapon.

The initiative coincides with USN's consideration for 'over-the-horizon' anti-ship missile to equip its next-generation frigate programme and current frigate force (formerly LCS).

The NSM has been developed by Kongsberg to meet the Norwegian Royal Navy's requirement for a highly discriminative, low-observable, sea-skimming anti-ship missile able to penetrate shipboard defences, and to operate effectively in both bluewater

**05** The Royal Malaysian Navy (RMN) Kedah (Meko 100) class corvette KD KELANTAN. The class of four ships is being converted to take on the ASW role. (USN)





and in challenging fjord-granite littoral environments.

The NSM has also been sold to Poland for mobile coastal defence applications. Other recent orders include a US\$21m contract from Boustead Naval Shipyard Sdn Bhd, to fit six new Malaysian Second Generation Patrol Vessels.

A successful live-fire demonstration was concluded from the Independence-class LCS USS CORONADO (LCS 4) in 2014. The 'proof-of-concept' firing demonstrated that the LCS had the potential to perform an increased OASuW role as part of the USN's emergent 'distributed lethality' programme.

## 06 F-125 FRIGATE PROGRAMME PROGRESSES

The German Navy's F-125 class frigate FGS NORDRHEIN-WESTFALEN (F-223) has been commissioned by TKMS on 16 April at the Blohm + Voss shipyard in Hamburg.

F-125 has been designed to support national and alliance interests, but also to support crisis prevention, crisis response, and intervention and stabilisation operations. The frigates are designed for greater endurance, including being able to deploy away from home port for up to 24 months – providing a coalition 'blue-water' capacity. Crewing is enhanced by a two-crew concept ('Alpha' and 'Bravo' crews), with options for crew rotation on station to reduce requirements for long transits.

The 7,100-ton frigates are 149 m long and 18 m in beam, with a CODLAG (combined diesel electric and gas) propulsion system. The frigates are fitted with a 127mm/64 Oto Melara Light Weight medium-calibre

gun system, two 27mm naval light guns, five 12.7mm machine guns, two RAM launchers, and four Rheinmetall MASS decoy systems. Two helicopters can be embarked. Additionally, four 10m RHIBs can be employed by special forces and is expected to be fitted with Harpoon Block 2 missiles.

The frigates' designed complement is 190 (120 crew, plus space for 50 Special Forces personnel and 20 aircrew). Noting operational / training margins can typically add 15-20% to the design crew, this is potentially a false economy that will increase future ownership costs. An 'in-build', additional 18-24 crew allowance could save in the long-run and provide some measure for future-proofing.

F-125 frigates will replace the German Navy's three (of eight remaining) F-122 Bremen-class frigates: the FGS KARLSRUHE (F-212); FGS AUGSBURG (F-213), and FGS LÜBECK (F-214).

## CHINA-RUSSIA NAVIES TO EXERCISE IN MEDITERRANEAN

China and Russia held Mediterranean maritime exercises 'to strengthen the friendly exchanges between the two sides ... and to improve the capability of the two navies to deal with maritime threats'.

The exercises were not apparently in response to fighting and instability in places such as Libya and Syria and the migration exodus from North Africa dwarfing the EU's ability to respond. This is said to maintain developing and strengthening ties between China and Russia as evidenced by China's siding with Russia on the UN Security

Council and refusal to condemn or sanction President Putin for his backing of the Ukrainian rebels.

Russia and China have increased their joint training operations in recent years through the Shanghai Cooperation Organisation and potentially, in future, through the Chinese-led Asia Investment Development Bank, following the UK's (and New Zealand) surprise declaration to put its weight behind the bank (despite strong US opposition). Recent indications suggest Australia could also join.

In its wider geo-strategic aspirations, China is looking to Russia for support in its disputes with Japan over the territories in the South China Seas while also supporting Russian claims for the Kuril Islands. China has continued to critique the US-Japanese defensive alliance – and implicitly the Australian-US-Japanese alliance – and changes to Japan's constitution that will allow it to undertake global maritime-based operations. Despite Chinese claims that 'military alliances are an outdated product that goes against the trend of the times characterised by peace, development, cooperation and win-win', the latest "drills" with Russia are further evidence of China's drive to build a true "blue water navy", capable of operating for prolonged periods and at vast distances beyond its "string of pearls"

## USN ESCORTING BRITISH COMMERCIAL VESSELS THROUGH STRAITS OF HORMUZ

The USN has begun

06 The German Navy's F-125 class frigate FGS NORDRHEIN-WESTFALEN (F-223) at her commissioning at TKMS on 16 April at the Blohm + Voss shipyard in Hamburg. (TKMS)



accompanying British-flagged commercial vessels through the Strait of Hormuz as a result of Iran's detention of a Marshall Islands-flagged cargo ship at the end of April.

The RN Armilla patrol that previously provided escorts and RFA auxiliaries to British (and US) flagged warships from the early 1990s through to 2006 was replaced by Operation Oracle, the UK's support to the United States in its operations in the Arabian Sea, Anti-Piracy operations, the Far East and Pacific. One of the consequences of the 2010 UK Strategic Defence Security Review was to dramatically reduce its escort ships. The USN had been accompanying US flagged ships traversing the strait in response to the earlier detention of the MV *Maersk Tigris* by Iranian Revolutionary Guard (IRG) patrol boats. The *Maersk Tigris* was approached by Iranian patrol vessels and ordered into Iranian waters.

The IRG has frequently used its 'Navy' to signal discontent to Tehran and as a means of reinforcing its own agendas – noting factional disputes between IRG sponsors; the current Western / US leaning, more liberal government of President Rouhani and the likely six-party nuclear deal with Iran (set for 30 June). A deal that the IRG sees may weaken its own position over that of President Rouhani; while at the same time strengthening the position of other Iranian backed militia factions, such as in Iraq and Hezbollah. The IRG was responsible for seizing HMS CORNWALL's RHIBs and ship boarding party in 2007, 'without a shot being fired'. Details of the closed report into the incident (led by Lieutenant General Sir

Rob Fulton RM) have yet to be revealed but are known to have severely criticised RN command and control, its resolve, ethos, tactical awareness, and fighting spirit.

## 07 NO RN FRIGATES ESCORT FOR 'LITTLE SHIPS' AT 75TH ANNIVERSARY OF DUNKIRK

University training Patrol boats HMS TRUMPETER and RANGER accompanied by 24 sailors from HMS COLLINGWOOD (the RN's major warfare and engineering training base in Fareham, with over 2500 personnel) recently crossed the Channel with the little ships of Dunkirk to mark the 75th anniversary of the evacuation.

The patrol boats escorted around 50 small craft, veterans of the massive effort led by the RN to save the British Expeditionary Force from destruction in May and June 1940, from Ramsgate to the French port.

More than 338,000 British and French troops were rescued during Operation Dynamo, most picked up by larger RN and Merchant vessels from Dunkirk, rather than the beaches along the coast. (Captain Emile Frank Verlain Dechaineux DSC RAN commanded the destroyer HMS VIVACIOUS during the Dunkirk evacuation). Prince Michael of Kent, the honorary Admiral of the Association of Dunkirk Little Ships, joined HMS TRUMPETER, flying the Royal Standard.

A flypast was provided by a Hurricane and Spitfire from the RAF's Battle of Britain Memorial Flight – air cover (controlled by

the RN) was vital in 1940 in keeping much of the efforts of the Luftwaffe to destroy the evacuating ships in check.

## USN NEEDS NEW SERVERS AFTER CHINESE PURCHASE OF IBM

The Navy needs new servers for its upgraded Aegis Combat System after the current IBM line was sold to Chinese computer maker Lenovo. The \$2.1 billion sale closed in October made Lenovo the number three server maker in the world.

IBM shedding its server business creates a security concern for the USN, which included the company's x86 BladeCenter HT server in its Aegis Technical Insertion (TI) 12. The TI-12 hardware upgrades, along with Advanced Capability Build (ACB) 12 software upgrades, compose the Aegis Baseline 9 combat system upgrade that combines a ballistic missile defense capability with anti-air warfare (AAW) improvements for the Navy's guided missile cruiser and destroyer fleets.

"The Department of Homeland Defense identified security concerns with the IBM Blade Center sale and placed restrictions on federal government procurement of Lenovo Blade Center server products,"

The major military concern is the servers could be compromised through routine maintenance or the information could be accessed remotely by Chinese government agents, The Wall Street Journal reported last year.

07 The Top Brass Heavy University Training Patrol Boat HMS TRUMPETER leading around 50 small craft for the 75th anniversary of the 'the little ships' victory at Dunkirk. (RN)





## 08 JAPAN APPROVES BIDDING FOR SEA-1000

Following an interesting debate including opposition from within the Japanese Naval Defence Force, on 18 May 2015 Japan officially announced that it will bid for a contract to build 12 submarines in Australia. The Japanese National Security Council approved sharing technical data on Japan's submarine technology with Australia.

Tokyo also officially announced that it will join the competitive bidding process for a A\$39 billion contract to build Australia's new submarine fleet in partnership with Australian industry.

Australia's Defence minister, Kevin Andrews, had invited his Japanese counterpart, Gen Nakatani, to participate in the competitive process during a teleconference on May 6.

"We have given consideration to defence cooperation between Japan and Australia," Nakatani said. "Australia is a strategic partner that shares common values and security interests" with Japan, he added.

Japan's brand-new, 4,000-ton diesel-electric Soryu-class stealth submarines, made by Mitsubishi Heavy Industries and Kawasaki Heavy Industries, is thought to remain the front-runners in the weapons deal.

## GERMAN-AUSTRALIAN FUTURE SUBMARINE OPTION – LESS STRATEGIC RISK?

The German company ThyssenKrupp AG (TKMS) appears to be Australia's second choice for the SEA 1000 future submarine competitive tender.

Recently, South Australia's Defence industries minister, Martin Hamilton-Smith, visited TKMS in Germany. The main purpose of his trip was to explain to the bidders, South Australia's capacity to build the submarines, noting the Government wants the vessels to be constructed in sovereign-partnership with Australian industry. The submarine programme aims to create 500 new jobs in the country, mostly in southern Australia.

Hamilton-Smith commented: "Australia has huge credentials as a centre for excellence in naval shipbuilding, underpinned by our highly skilled workers. The South Australian government has created a world-class facility at Techport Australia and we are determined to see Australia's future submarines built here... 120,000 man-years of jobs depend on the future submarine programme alone."

Placing Australia's 'submarine eggs all in a Japanese basket' will mean that Australia balances irrevocably (for the next 50 years) towards Japan. This may place Australia within the Japanese 'trip wire', necessitating an Australian response in support of Japan in the event of rising tensions in the region. While the Soryu may be the better, least engineering risk and proven submarine – its geo-strategic sovereign risks, may outweigh its technological and even cost advantages..

## UNITED IN ARMS 11 YEARS ON

During Operation MANITOU deployment, personnel from Maritime Operations Support Group and Combined Task Force 150 visited the USN Patrol Craft

USS FIREBOLT for a tour. For two Royal Australian Navy personnel who were on board HMAS STUART 11 years ago when they jointly patrolled with USS FIREBOLT in the North Arabian Gulf.

On 24 April 2004, three personnel from FIREBOLT were killed and four were seriously wounded when the dhow they were investigating blew up as part of a coordinated attack on the Iraqi oil terminals. STUART was immediately on the scene providing helicopter and medical support to the crew.

"Back in 2004, it was difficult to grasp the significance of the incident and the legacy that would still exist 11 years later," Petty Officer Galletly said. "Having the chance to visit FIREBOLT and view the memorials on board was a sombre reminder of three US servicemen that gave their lives in the international campaign against terrorism.

"Being able to read the letter sent from Commanding Officer STUART to Commanding Officer FIREBOLT rekindled the feeling of camaraderie the two ships held during their time patrolling together in the North Arabian Gulf. "A framed, two-page handwritten letter by Commander Philip Spedding RAN hangs in our main passageway," Lieutenant Commander McGuffie said.

"The letter, dated 27 April 2004, eloquently highlights the fact Australians and Americans have fought side-by-side in every major conflict since the First World War. Spedding writes in his concluding sentence, 'America has no more loyal friend than Australia, and my team in STUART will await your return to the Northern Arabian Gulf so that we can

**08** The Japan Maritime Self-Defense Force (JMSDF) submarine JS HAKURYU (SS 503) arrives at the submarine piers of Joint Base Pearl Harbor-Hickam. (USN)



fight side-by-side again.'

Proudly hanging in FIREBOLT's passageway is a photo of STUART signed by the entire ship's company signifying their support following the events that transpired in April 2004. The photo is entitled 'To our mates in USS FIREBOLT – United We Stand.'

## 09 EMLS TESTING WELL

The USN conducted the first-ever, shipboard, full-speed catapult shots using the Electromagnetic Aircraft Launch System (EMALS) aboard the aircraft carrier Pre-Commissioning Unit (PCU) GERALD R. FORD (CVN-78), Naval Sea Systems Command announced May 15.

EMALS is a carrier-based launch system designed to expand the operational capability of the Navy's future carriers to include all current and future planned carrier aircraft. The recent test shots, known as "no-loads" because no aircraft or other loads were attached to the launching shuttle, successfully demonstrated the integrated catapult system. Using electromagnetic technology, the system delivers substantial improvements in system maintenance, increased reliability and efficiency, higher-launch energy capacity, and more accurate end-speed control, with a smooth acceleration at both high and low speeds. By allowing linear acceleration over time, electromagnetic catapults also place less stress on the aircraft.

"This is a very exciting time for the Navy," said Programme Executive Officer for Aircraft Carriers Rear Adm. Tom Moore. "For the first time in over 60 years, we've just conducted 22 no load test shots using

electricity instead of steam technology."

During the tests, generators within the ship produced an electric pulse, which was passed through power conditioning electronics to linear motors just below the flight deck surface. This energy allowed for the linear motors to propel the launching shuttle down the catapult track in excess of 180 knots before bringing the shuttle to a stop at the end of the track.

The next phase of EMALS testing, scheduled for this northern hemisphere summer, will involve launching "dead-loads" off of the bow of CVN 78 into the James River. "Dead-loads" are large, wheeled, steel vessels weighing up to 80,000 pounds to simulate the weight of actual aircraft. The dead-loads will be launched from each catapult using a specific test sequence to verify that the catapult and its components are operating satisfactorily.

To date PCU GERALD R. FORD is 90 percent complete and 1,550 Sailors have reported for introduction and training. CVN-78 will be commissioned in March 2016.

## SM-6 MOVING FASTER

US Company Raytheon's Standard Missile-6 program has moved from low-rate to full-rate production, clearing the path for significantly increased production numbers and focus on further cost-reduction opportunities.

SM-6 is a surface-to-air supersonic missile capable of successfully engaging manned and unmanned aerial vehicles and fixed- and rotary-wing aircraft. It also defends against land-attack and anti-ship cruise missiles in flight.

"SM-6 is proven against a broad range of advanced threats, which makes it very valuable to Combatant Commanders who need and want that flexibility," said Mike Campisi, Standard Missile-6 senior programme director. "Full-rate production allows us to significantly ramp up production and deliver to the USN the quantities it needs to further increase operational effectiveness."

The first full-rate production round was delivered to the USN from Raytheon's state-of-the-art SM-6 and SM-3 all-up-round production facility at Redstone Arsenal in Huntsville, Ala. Prior to final assembly, a majority of the SM-6's section level assembly and testing development took place at Raytheon's subsystem centre factory in Tucson, Ariz.

Raytheon has delivered more than 180 missiles to the USN, which deployed SM-6 for the first time in December 2013.

SM-6 delivers a proven over-the-horizon air defence capability by leveraging the time-tested advantages of the Standard Missile's airframe and propulsion.

The SM-6 uses both active and semiactive guidance modes and advanced fuzing techniques.

It incorporates the advanced signal processing and guidance control capabilities from Raytheon's Advanced Medium-Range Air-to-Air Missile (AMRAAM). ■

**09** The Electromagnetic Aircraft Launch System (EMALS) aboard the aircraft carrier Pre-Commissioning Unit (PCU) GERALD R. FORD (CVN-78) undergoing testing. (USN)





# THE RUSSO-JAPANESE WAR 1904-1905: THE MOST IMPORTANT NAVAL CAMPAIGN YOU'VE NEVER HEARD OF

By Geoff Crowhurst

**The Russo-Japanese War was fought between the Russian Empire and the Empire of Japan over rival imperial ambitions in Manchuria and Korea. The major theatres of operations were the Liaodong Peninsula and Mukden in Southern Manchuria, and the seas around Korea, Japan, and the Yellow Sea. Geoff Crowhurst's 2014 Non-professional essay entry explains more about a naval campaign few are aware of.**

The Russo-Japanese War of 1904-1905 was the first major war of a violent century. Following Japan's victory over China in the war of 1894-1895, the Japanese stationed forces in Korea and Port Arthur, situated on the Chinese Liaodong Peninsula on the shores of the Yellow Sea. Russia, keen to expand its power in the east, brought pressure on Japan which caused it to remove its forces and return the conquered territory to China. Russia then gained administration over both Korea and the Liaodong Peninsula from China and in return bankrolled China's war reparations payments to Japan. Port Arthur became the base for the Russian Pacific Fleet. The humiliation and the loss of the economic and strategic territories to Russia left Japan in a weakened position and they began to plan a military solution.

The war commenced on the night of 8/9th February 1904 when 10 Japanese destroyers made a torpedo attack against the Russian Pacific Fleet anchored in Port Arthur. This attack damaged two Russian battleships and a cruiser. In the 12 hours that followed, the Russian commander, Vice-Adm Stark, did little to prepare for further hostilities. A follow up attack the next day by the main Japanese battle fleet resulted in light damage to four Russian battleships and four cruisers, and four Japanese battleships and three cruisers. The Russian fleet did not leave harbour during the attack but did return fire although most of the damage to the Japanese was caused by shore batteries. It wasn't until several hours after this surprise attack that the Japanese government issued its declaration of war.

Over the next month the Japanese attempted, unsuccessfully, to close Port Arthur with block ships and minefields, and established a close blockade with light forces while their battleships provided distant support 110 km away. The Russians laid defensive minefields and patrolled with light forces, never venturing far from Port Arthur and not seeking combat with the Japanese. This situation changed when Vice-Adm Stark was replaced by Vice-Adm Makarov on 7 March 1904. Experienced and aggressive, Makarov was not content with a passive defence and commenced

sorties against the Japanese fleet which resulted in some minor contacts.

Makarov had a considerable force available. It consisted of seven pre-Dreadnought battleships, five cruisers and 42 destroyers and torpedo boats, although he had three battleships undergoing repairs following the

Japanese surprise attack. He faced Adm Togo, whose skill and experience led him to be labelled the 'Nelson of the East'. Togo's forces consisted of six pre-Dreadnought battleships, nine cruisers and 47 destroyers and torpedo boats. While the forces looked roughly even on paper, Togo had to preserve his strength as he commanded all of Japan's modern battleships. However it was in the quality of the crews that the main difference can be seen. In the Tsar's navy the average sailor was conscripted and usually illiterate. He was ignored or even despised by his officers and NCO's. He had to serve seven years active service followed by three years in reserve. Promotion was rare and conditions, pay and food were poor. By contrast the Japanese sailor was respected by his officers and NCO's and while his conditions were sparse aboard ship, food was plentiful and of good quality. He served for eight years with four years in reserve but had opportunities for promotion. On average, the Japanese sailor was better trained, led and provided for than his Russian counterpart.



Russian and Japanese territories at the outbreak of the 1904/05 War (Portsmouth Peace Treaty Organisation).

To counter Makarov's new aggressive tactics, on 22nd March Togo sent two battleships to Pigeon Bay on the northern side of the Liaodong Peninsula to shell Port Arthur by firing 152 12-inch shells over the peninsula into the harbour. Although firing blind, the Japanese scored hits on two Russian battleships that were just finishing their repairs from the first day's battles, damaging them further. A furious Makarov stationed guns on the hill overlooking Pigeon Bay and had observers placed there to adjust his battleships return fire should the Japanese try this again. Several days later the Japanese repeated this tactic and suffered hits to a battleship and a cruiser.

Togo then sent his destroyer squadrons in to harry the Russian light patrols, hoping to draw the Russian battleships onto his own fleet waiting



Painting of Admiral Togo on the reinforced bridge of the Japanese battleship MIKASA, before the Battle of Tsushima in 1905: "MIKASA PAINTING" by Tōjō Shōtarō.

over the horizon. On April 13th, following a clash between opposing destroyer forces close to Port Arthur, Makarov sortied with the battleships PETROPAVLOVSK and POLTAVA, accompanied by four cruisers. They exchanged fire with the Japanese light forces who turned and fled, with the Russians in pursuit. At a point 24 km from port, a Japanese fleet of five battleships steamed into view. Makarov reversed course and steamed for safety. On reaching Port Arthur, PETROPAVLOVSK sailed over a Japanese minefield laid the night before and detonated two mines. The ship sank in two minutes taking 677 crew with it, including Makarov. Later that day battleship POBIEDA also hit a mine and limped back to harbour.

Makarov's replacement was Rear Admiral Vitgeft, who had very different ideas for the fleet. Vitgeft saw the Pacific Fleet as a fleet in being, to be preserved until reinforced by the rest of the navy. As such, he refused to risk his ships in combat. He allowed a Japanese invasion army to land unmolested, just 96km northeast of Port Arthur on 5 May. On May 15th, Togo ordered the battleships HATSUSE and YASHIMA to shell the Russian port. As they approached the harbour they encountered a new Russian minefield and detonated mines. HATSUSE lost steering and drifted onto a second mine which set off its forward magazine and sank immediately with 336 crewmen killed. YASHIMA was towed away but sank several hours later. At one stroke, Togo's force was depleted by a third. Four weeks later Vitgeft's force was boosted with the return to service of his three damaged battleships. The balance of power now shifted decisively towards the Russians although Vitgeft didn't know this. Even if he had been aware, he would not have sortied against the Japanese.

To the north, the four cruisers of Admiral Besobrazov's Vladivostok Squadron were raiding the Japanese lines of communications. Togo was forced to dispatch a squadron of cruisers and destroyers to protect the northern flank, reducing his available strength outside Port Arthur. On 15th June Besobrazov patrolled the mouth of Tokyo Bay and sank two freighters carrying an infantry battalion and a battery of siege guns bound for the front. In response, the Japanese blockaded Vladivostok, successfully bottling up Besobrazov's cruisers.

In late April, the Russian command decided to reinforce the Pacific Fleet (now renamed 1st Pacific Squadron) with ships from the Baltic Fleet. They also ordered Vitgeft to move the fleet up to Vladivostok to escape the

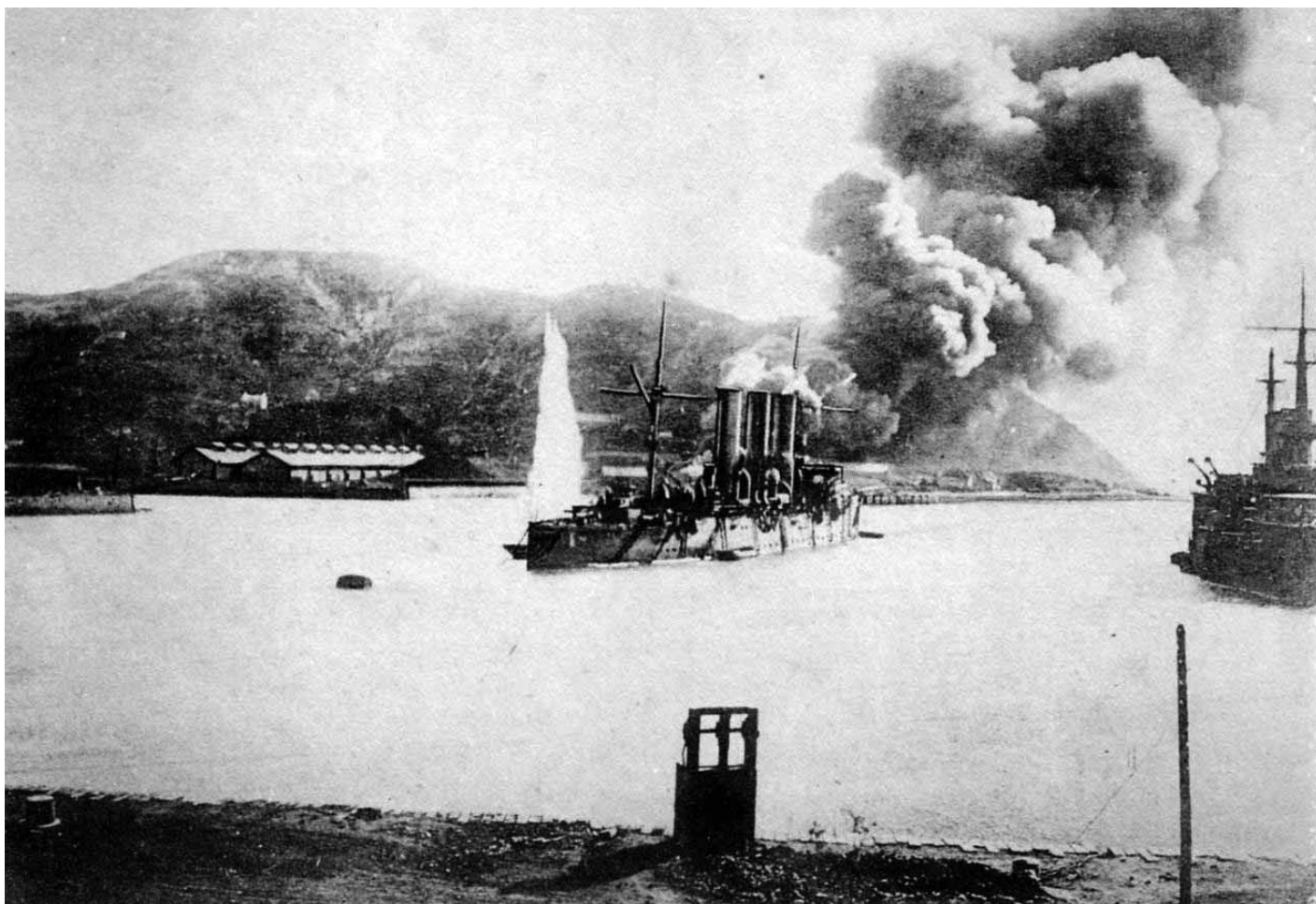
advancing Japanese army. Vitgeft, however, refused to move. He planned to wait for the arrival of the Baltic Fleet, now renamed the 2nd Pacific Squadron. However, after weeks of heavy pressure from his superiors, he attempted a breakout on 23rd June. Togo was warned of the sortie by his screening forces and moved to intercept. The two fleets sighted each other at 1800 and began to manoeuvre into firing range. At 1900, with sunset (and safety) less than an hour away, and significantly outnumbering the enemy in heavy guns, Vitgeft reversed course and steamed back to Port Arthur, easily brushing off night torpedo attacks by Togo's destroyers. Despite having every advantage, he handed Togo a strategic victory with barely a shot fired.

Vitgeft's return to Port Arthur sent morale plummeting. The garrison now believed themselves to be trapped. Vitgeft returned to his strategy of inaction and awaiting the arrival of the 2nd Pacific Squadron. Meanwhile, the Japanese steadily advanced on Port Arthur from the north. Anticipating a siege, Vitgeft stripped his ships of their lighter armament and sent them with their crews ashore to bolster the defences. By the end of July, the Japanese had surrounded Port Arthur and on 7th August, the first shells fell into the harbour area. Vitgeft was wounded in the leg when two 4.7-inch shells hit his flagship TSESAREVICH. On 9th August the battleship RETVIZAN was hit seven times which resulted in minor flooding to five compartments. On that same day an order from the Tsar arrived, commanding Vitgeft to sortie to Vladivostok immediately. With a strong sense of foreboding, Vitgeft led his fleet to sea on 10th August 1904.

Vitgeft commanded six battleships, four cruisers and eight destroyers. The Japanese blockade forces alerted Togo and shadowed the Russian fleet. Togo's fleet was dispersed on various tasks and it took time to concentrate his ships and intercept. The two fleets sighted each other at 12.25, two and a half hours after Vitgeft had sailed. Togo had four battleships and two armoured cruisers, 18 destroyers and a squadron of torpedo boats. Togo was outgunned, the Russians fielding 23 12-inch guns (battleship SEVASTOPOL had one gun unserviceable) while the Japanese had 16 12-inch guns available. Both commanders kept their light forces out of the main battle, making it a contest between the heavy units.

On sighting the enemy fleet, Togo attempted to cross the Russian "T". Vitgeft saw this manoeuvre developing and deftly changed course, causing the Japanese to pass to the rear of his battle line. Togo altered course and steamed to catch up. He now received a timely reinforcement, four armoured cruisers commanded by Admiral Dewa. At 13.25 the two fleets opened fire at 13 km with both sides scoring hits. As the range dropped and the ship's secondary armament engaged, Togo altered course away from the Russians, in part due to the damage his flagship MIKASA was receiving and also to allow Dewa's cruisers to engage the van of the Russian battle line. But when Dewa's flagship took a direct 12-inch hit at a range of 13km, 5km beyond the reach of his 8-inch guns, he turned and retired.

After several hours of hard steaming the Japanese regained the Russian battle line and at 17.35 at a range of eight kilometres both fleets re-engaged. Again, it was the Japanese who came off worse. As well as suffering damage from the Russian's Semi Armour Piercing ammunition, the Japanese now had trouble with their own shells. Togo was using newly developed ammunition, which after hours of vibration and heat had become unstable, causing premature detonations, with the resulting explosion destroying the gun barrel. In quick succession his battleships



The Fuel Depot on Fire and Russian Battleships under bombardment during the surprise attack on the Russian fleet at the Battle of Port Arthur (now Lüshun) during the Russo-Japanese War.

lost three guns to faulty ammunition, and a further three to Russian fire.

Heavy and accurate Russian gunnery was just one of several unpleasant surprises the Japanese faced. Very few Japanese shells penetrated the Russian battleship's armoured belts, while a greater percentage of Russian shells were penetrating Japanese armour. The Russians had suffered many hits, but few that interfered with their battleship's abilities to steam and fight. Darkness was now half an hour off and Vitgeft felt confident of escaping the Japanese and making Vladivostok. By 18.30, with the range down to 7km, Togo was beginning to think of disengaging to save his fleet. But ten minutes later, luck deserted the Russians.

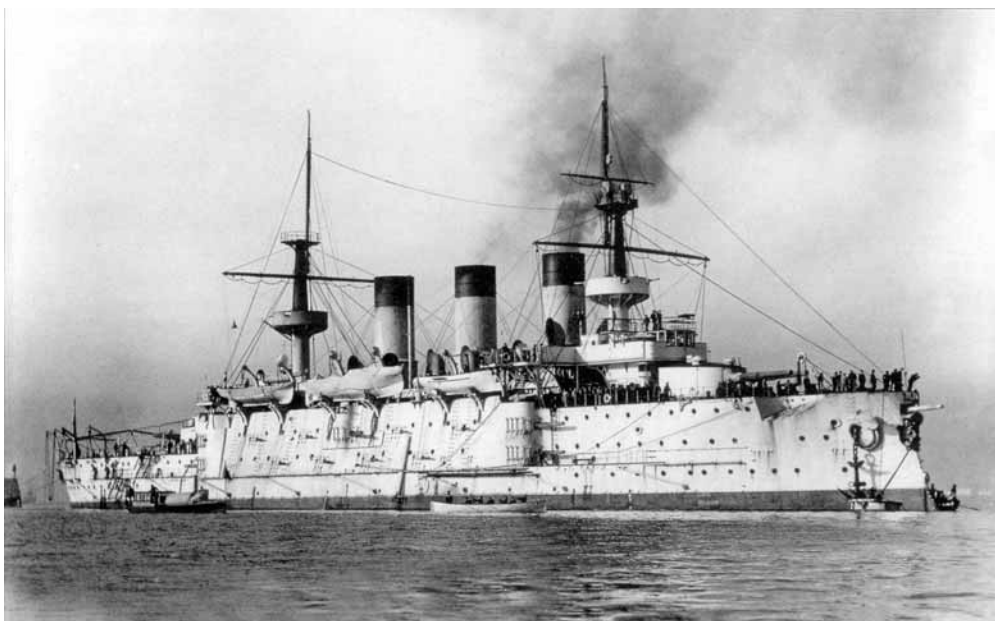
At 18.40, a salvo fired by battleship ARASHI hit TSESAREVICH on the bridge. The blast killed everyone on the bridge; the only part of Vitgeft that was found was his left foot, still in its boot. The blast also jammed the steering and TSESAREVICH heeled sharply to port. The next two battleships in line followed, believing TSESAREVICH to still be answering the helm. Completing a full circle, TSESAREVICH sliced back through the battle line, leaving the Russians in disarray. Seeing that the Russians had no hope of reforming before darkness, Togo ordered his destroyers in and led his battleships (damaged and short on both ammunition and fuel) back to harbour. Once again, the Russians returned to Port Arthur.

The Yellow Sea was the first battle of the modern naval era. It ended as a victory to Japan, with the Russian fleet retreating to Port Arthur. Over the next five months, that fleet sat idle, the new commander, Vice Admiral Viren, flatly refusing every order to sortie. In December, it was bombarded by newly arrived 11 inch siege artillery and sunk in the inner harbour over a space of just two days.

In October 1904, the 2nd Pacific Squadron, commanded by Vice-Admiral Rozhdestvenski, sailed from the Baltic for the Far East. In a mammoth and incident filled undertaking, this fleet sailed halfway around the world via separate routes to reform in Cam Rahn Bay in French Indochina, arriving seven months later in April 1905. The Russian fleet steamed north towards Vladivostok on May 9th. Rozhdestvenski chose the transit the Tsushima Strait in late May as it was the most direct route to Vladivostok. Suspecting this, Togo's force was waiting. On paper, the Japanese seemed heavily outnumbered. Togo's four battleships, 27 cruisers, 21 destroyers and assorted torpedo boats were up against Rozhdestvenski's 11 battleships, eight cruisers and nine destroyers.

The two fleets could not have been more different. The Russians had just completed a 29,000 km voyage. They had no time to refit or carry out much needed maintenance. The vessels were all sailing with fouled hulls. During the seven month journey, Rozhdestvenski had not exercised his fleet in manoeuvring or gunnery. He hoped to avoid combat, as he expected to be defeated by the Japanese. Most of the junior ranks were new recruits (class of 1904) and their knowledge of even basic seamanship was poor. Food, morale and conditions were bad and communist agitators were spreading dissent among the crews.

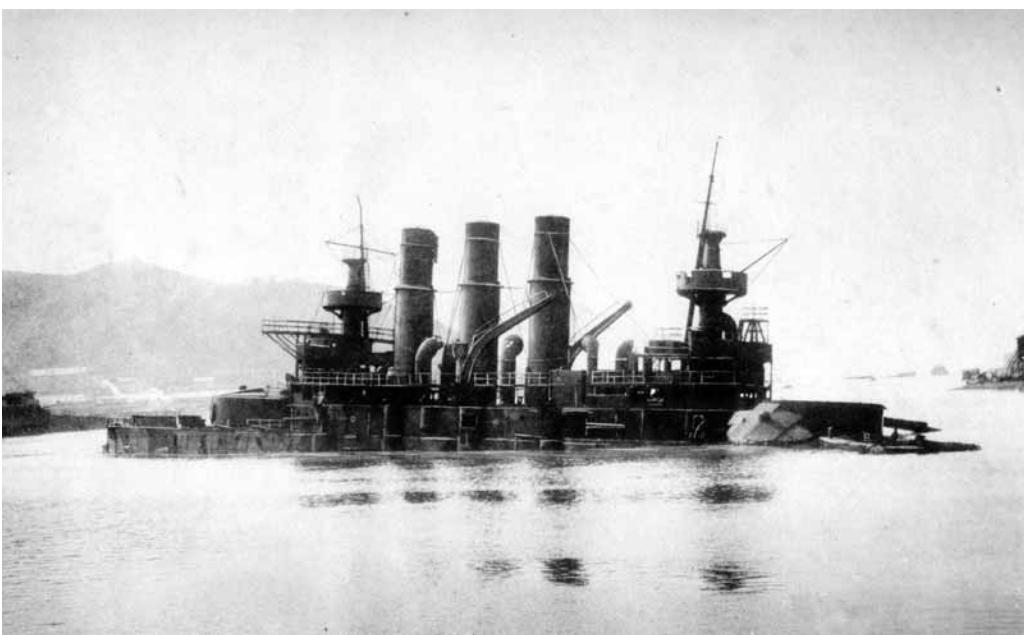
Togo's fleet was quite the opposite. When not on operations, Japanese ships returned to port for maintenance and refit, giving the crews shore leave. He informed his subordinates of his plans to fight the upcoming battle and exercised his fleet according to those plans. He ensured that every man knew what was expected of him. He applied lessons learnt in the Yellow Sea battle. He had the faulty ammunition removed from his ships. The Japanese fleet was well prepared and eager for battle.



Russian Battleship PERESVET in 1901, destroyed Port Arthur 9 Dec 1904.

The Russian fleet entered the Tsushima Strait in the early hours of 27 May 1905. The element of surprise was lost when Japanese scouts (Admiral Dewa's Cruiser Squadron) spotted Rozhdestvenski's two fully lit hospital ships. Togo sortied when he received the scout's radio reports. The Russians engaged Dewa's cruisers as soon as it became light, keeping them at a distance but not driving them off. The two battle fleets met at around 1300. On seeing the Japanese approaching, Rozhdestvenski ordered his fleet, which was steaming in two columns, to form a single battle line. The resulting confusion and multiple near collisions only served to highlight the Russian's poor seamanship and lack of preparedness.

As at the Yellow Sea, at 13.55 Togo manoeuvred to cross the Russian 'T'. This time he succeeded but Rozhdestvenski had placed his best ships in the van of his battle line and the Japanese quickly took hits from accurate Russian fire. But unlike the Yellow Sea battle, Togo quickly closed the range so that his numerical superiority in mid-calibre weapons enabled him to smother the Russian battleships in effective fire. During the next hour the two fleets pounded each other in line formation. The Japanese sunk the battleship OSLYABYA and disabled Rozhdestvenski's flagship SUVOROV. Rozhdestvenski was incapacitated by a head wound at 15.00.



Battleship RETVIZAN sunk in Port Arthur 7 Dec 1904.

After this the Russian line began to fragment. During the course of the afternoon and evening Togo manoeuvred his fleet to divide the Russian battle line, then concentrated his fire and destroyed those smaller groups. As night fell he ordered his battleships to stand off and sent in his destroyers and torpedo boats. By 28th May, it was all over. Togo's fleet had sunk seven battleships and 14 cruisers and destroyers. They captured eight ships, including three battleships. The Russians lost 4,380 killed and 5,900 captured. In contrast the Japanese losses amounted to three torpedo boats sunk and 500 casualties which included 110 killed.

The disaster at Tsushima brought the Russians to the negotiating table and ended the war three months later, very much in Japan's favour. However it did more than this, the defeat destroyed

the Russian people's confidence in the Tsar's rule. In June 1905, the battleship POTESKIN's crew mutinied when they heard rumours that they would be sent to the Pacific theatre. Losing the war contributed to the Russian Revolution of 1905. It was the first major modern war between a European country and an Asian state. It validated Japan's political gambit of commencing hostilities before a declaration of war, as in the Sino-Japanese War 1894-1895. Russia's defeat destroyed the myth of white supremacy and led to Japan's rise as the major political and military power in Asia for the next 40 years.

It was the first naval campaign fought between modern armoured warships powered by coal fired steam engines, equipped with radios, firing armour piercing shells from breech loading guns, using modern stereoscopic rangefinders to open accurate fire at previously unheard of ranges. Both sides operated submarines, although none saw combat. It highlighted the vulnerability of warships to mines and saw the first widespread use of torpedoes, with each side firing around 300.

Tactical and strategic lessons learned in combat were incorporated into Japanese naval doctrine. The campaign had a huge influence on naval strategy. Togo's victory at Tsushima became the gold standard for all Japanese naval planning. After World War One Japanese naval strategy was to draw the US fleet across the Pacific to a place of Japan's choosing and destroy it in a single decisive action, as Togo did to the Russians at Tsushima. This led to the Japanese keeping major units out of action at crucial times during World War Two, waiting for their chance to repeat Tsushima. When that chance finally came, it was the Americans who drew the Japanese fleet onto their guns and defeat at the battle of Leyte Gulf. ■



# BEATTY AND THE BIG CATS: A FATAL CONVERGENCE

By David Rees

**Experience in both world wars would demonstrate that the battle cruiser was a flawed weapons system destined to be swept away by the fast battleship. Such experience would be painfully acquired, particularly by the Royal Navy. Navy League 2014 essay finalist David Rees examines this in this his third place essay.**

## INTRODUCTION

The run up to the First World War saw a considerable number of innovations in the naval world. In the long term it was developments like the submarine that had the most impact. But it is probably fair to say that it was the battle cruiser that had the shortest career and the most dramatic demise. Experience in both world wars would demonstrate that the battle cruiser was a flawed weapons system destined to be swept away by the fast battleship. Such experience would be painfully acquired, particularly by the Royal Navy.

At the same time that the battle cruiser was reaching its zenith, the naval officer who would lead three battle cruisers to destruction, David Beatty, was developing his career. Like the battle cruisers, he was a romantic figure and prone to attention seeking. This liking for personal and professional attention was coupled with an unfortunate lack of attention to technical minutiae, and the result would be death of several thousand British sailors.

## THE BIG CATS

The battle cruiser was the brain child of Admiral John Fisher. It was not developed in isolation; historians have suggested that it was part of a system involving submarines, destroyer flotillas and battle cruisers that Fisher planned would defend both Britain and her empire (1). Destroyers and submarines would defend the British Isles themselves from harm (submarines would make it impossible for enemy battle fleets to operate in the Channel), while battle cruisers, heavily gunned, lightly armoured and fast would destroy any opposing warships that posed a threat to British trade.

So battle cruisers were intended to destroy enemy cruisers, and the Battle of the Falklands in 1914 and the Battle of Dogger Bank in 1915 demonstrated that battle cruisers could be very effective in this role. But Fisher also envisaged that they would be able to stand up to enemy battleships because of their use of high speed and the employment of better fire control systems which would enable them to shoot successfully at long range (2).

However, a number of factors would increasingly cause uncertainty regarding the role of the battle cruiser. British fire control systems were not superior to that of their potential German rivals. The argument continues

over whether the adoption by the RN of the Captain Frederick Dwyer fire control system over the system developed by Arthur Pollen meant that British fire control was definitely inferior to that of the German navy, but it was certainly no better (3).

Furthermore, battleships were getting faster, although on the whole they were still slower than battle cruisers. By 1912 the RN was looking to

use the battle cruisers as scouts for the battleships of the Grand Fleet (a tactic Beatty favoured), but that put them at risk from both their German battle cruiser opponents, who were at least their equals (and sometimes their superiors) in a number of areas and the battleships of the German High Seas Fleet. In both scenarios the relative thin armour of British battle cruisers could become a serious disadvantage.

By the beginning of the First World War the Royal Navy had eight battle cruisers of three different classes (two of the Invincible class, three of the Indefatigable class, and two of the Lion class, with the newest battle cruiser, Queen Mary, being very similar to the Lion's). The later classes in particular were known as the Big Cats.

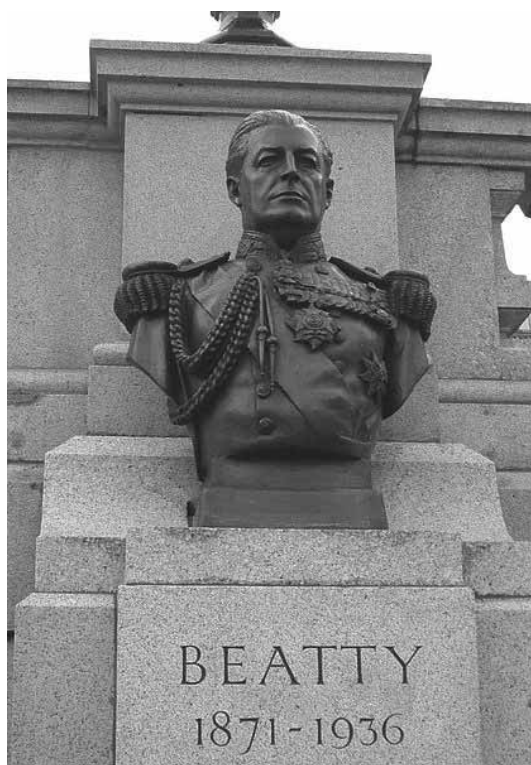
The German Navy produced battle cruisers as well. There were several important differences between British and German battle cruisers. German battle cruisers were smaller and generally slightly slower, with smaller main armament. However they were better armoured than their RN counterparts because Grand Admiral Von Tirpitz of the

German Navy emphasised the need for his ships to be survivable (4). The Germans used less volatile and more reliable propellant for their main shells (Jutland demonstrated that British shells often broke up on impact) and stored them in brass casings, whereas the RN used silk containers that were far more flammable.

Above all else, the crucial distinction seems to have been that the two navies took different lessons regarding ammunition handling procedures from the same battle i.e. the battle of Dogger Bank. The significance of this is discussed below.

## THE OUTBREAK OF WAR

At the outbreak of war the strategy which Fisher had envisaged had not come to pass. The RN certainly had large numbers of battle cruisers, submarines and destroyers, but responsibility for the maritime defence of



Bust of David Beatty against the northern wall of Trafalgar Square. The eastern most fountain is dedicated to him.



A Young Churchill and his "Sea Daddy", Admiral of the Fleet John Arbuthnot "Jacky" Fisher, 1st Baron Fisher.

the British Isles rested with the battleships of the Grand Fleet which was based at Scapa Flow. The Battle Cruiser Squadron, which was part of the Grand Fleet under Sir John Jellicoe, was based at Rosyth, some 200 miles away on the Firth of Forth, Scotland, although at any one time individual battle cruisers might be despatched on tasks. It was an unfortunate choice of location, since it provided the battle cruisers with little opportunity for gunnery practice, and this would have serious consequences <sup>(9)</sup>.

## THE LEADER OF THE BIG CATS

On 1 March 1913 Rear Admiral David Beatty was made commander of the First BCS. Beatty had had a remarkable career and would continue to do so. He received early promotion for conspicuous bravery (at Khartoum and during the Boxer Rebellion) At the age of 29 he was made a captain, the youngest in the RN since Nelson. In an age of gunners he was a generalist (partially due to the fact that he did not achieve the academic results necessary for specialisation). In 1908 at the age of 38 he was made a Rear Admiral, again the youngest of that rank since Nelson. A man of considerable social background (he was part of the Anglo-Irish elite, although possibly illegitimate), he had served on the Royal yacht *Victoria and Albert* in 1892 and subsequently married a very wealthy if very unstable heiress, a decision which gave him both financial independence and domestic distress.

Beatty's career up to 1914 showed he was physically exceptionally brave, intellectually lazy (although not unintelligent) and distinctly arrogant. He survived and in fact prospered because of a number of factors; he was courageous and in many ways a natural leader, he had powerful family connections (particularly after his marriage) and the RN was expanding and thus in need of officers. Photos suggest that David Beatty looked the part of a dashing young Admiral <sup>(6)</sup>.

In 1912 the Admiralty offered Rear Admiral David Beatty command of the Atlantic fleet, a position he declined. Commentators have put forward various reasons for this decision, ranging from the possibility that he did not want to be directly junior to anyone to the idea that he wished to serve in the Home Fleet because it was both more likely to see action against Germany and it was based closer to his wife in London. It was

not a decision calculated to endear him to either the Admiralty or his peers. The Admiralty demonstrated little interest in offering him further employment <sup>(7)</sup>.

Beatty survived this by securing an appointment as Naval Secretary to Winston Churchill, the new First Lord of the Admiralty. Churchill had liked Beatty from the time they met; as personalities they had much in common. The position gave Beatty the opportunity to put himself forward for desirable appointments, and in turn this led to the above mentioned appointment as commander of the First BCS in 1913. On the outbreak of war he was made a Vice Admiral and in 1915 the battle cruisers were combined into the Battle Cruiser Fleet (BCF).

## LIEUTENANT RALPH SEYMOUR AND BATTLE CRUISER SIGNALLING

As commander of the First BCS, Beatty was allowed to choose his own staff. In 1913 he appointed Lieutenant Ralph Seymour as his Flag Lieutenant. Seymour would stay with Beatty throughout the war and his performance was uneven. It is not clear why Beatty appointed him; Seymour came from aristocratic lineage, and Gordon suggests that his sister was a close friend of Winston Churchill's wife. Seymour's appointment was to prove to be an unfortunate one for both Beatty and the battle cruisers <sup>(8)</sup>. In all fairness, the facts suggest that while he may not have been adequately trained for his job, the impact of new technology also helped to make effective signalling very difficult between ships operating at high speeds and at long ranges.

## SMOTHER THEM WITH FIRE

The RN believed that success in battle depended on high rates of fire. The policy of fire meant that British ships carried large stocks of ammunition. There was great pressure to sustain high rates of fire, even if there was some risk to the ship involved. Measures to increase rates of fire included removing cordite from its protective casing and stacking it near the turret hatch or outside the main magazine. In April 1914 the Admiralty surveyed all flag officers and captains regarding the storage of medium calibre ammunition; most said the only way to sustain high rates of fire of such ammunition (which was seen as crucial for defending ships against torpedo attack by destroyers) was to stack it outside turrets. The increased risk of cordite fires was seen as acceptable. Nicolas Lambert suggests that the same practice was followed with large calibre ammunition for the main armament <sup>(9)</sup>.

The experience of war quickly showed that the practise of storing ammunition near turrets might have drawbacks.

In 1915 the armoured cruiser HMS KENT was nearly lost to a magazine explosion at the Battle of the Falklands; fire travelled down an ammunition hoist to cordite stacked outside the main magazine. In February 1914 the Admiralty instructed that excessive ammunition accumulation should be avoided, but many captains ignored this directive <sup>(10)</sup>. The battle cruisers in particular were noted for both an emphasis on rapid fire and a very poor rate of accuracy (inferior to that of the battleships of the Grand Fleet). Andrew Gordon suggests that because the battle cruisers had little opportunity for shooting practise their senior officers such as Beatty and Captain Ernle Chatfield, Beatty's Flag Captain, tried to compensate by training their ships to shoot very rapidly <sup>(11)</sup>. Contemporary observers such as Filson Young observed the rapidity with which the battle cruisers tried to fire <sup>(12)</sup>.



HMS KENT One of the ships at the Battle of the Falklands 1914.

## INTO BATTLE: THE FALKLANDS (1914)

Beatty's battle cruisers saw themselves as an elite force. Yet from the beginning their performance in action was poor, particularly when they were engaged against ships of an equivalent calibre.

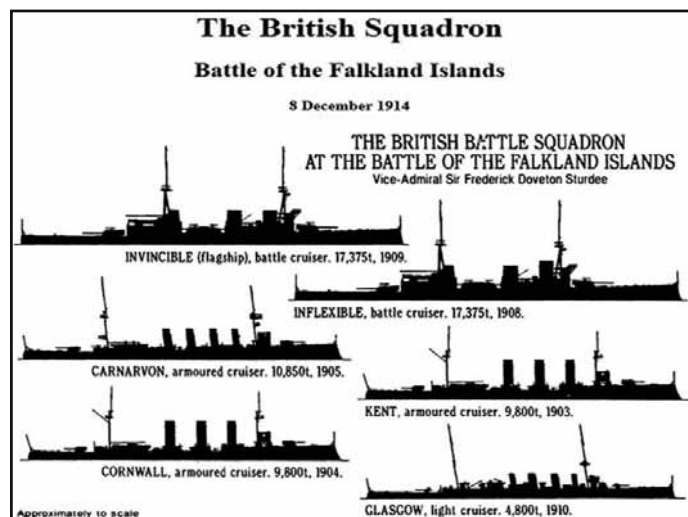
At the Battle of the Falklands on 8 December 1914 the battle cruisers INVINCIBLE and INFLEXIBLE destroyed the German Squadron under Admiral Von Spee that had previously defeated British forces at the Battle of Coronel in November. The British squadron at the Falklands was under the command of Vice Admiral Sturdee, and the British battle cruisers did what they were designed to do; they blew apart two German armoured cruisers that were a potential threat to British trade and coaling stations. However, British observers contrasted the excellence of German shooting with the performance of the British battle cruisers, whose shooting was very inaccurate <sup>(13)</sup>. There were a number of contributing factors, including a lack of proper practice. The battle also showed that captains, navigators and gunnery officers were still learning how to effectively control large ships that steamed rapidly (creating a great deal of smoke which hampered visibility), manoeuvred rapidly (which disturbed shooting) and vibrated at high speed (which affected the performance of sensitive instruments crucial for effective shooting).

## DOGGER BANK (1915)

In many ways, the battle of Dogger Bank on 24 January 1915 was a precursor to the major test of Jutland. In essence five British battle cruisers (LION, TIGER, PRINCESS ROYAL, NEW ZEALAND and INDOMITABLE, with Beatty flying his flag in LION) ended up in pursuit of three German battle cruisers SEYDLITZ, MOLTKE and DERRFLINGER and one armoured cruiser, BLUCHER.

By the time the action was concluded the BLUCHER had been sunk and LION, TIGER and SEYDLITZ had all been severely damaged. The poor choice of signals from Seymour on the LION was an important fact in the German battle cruisers escaping. In fairness it should be noted that new technology played a part in this; the high speed of the pursuit, the long ranges and the huge amount of smoke meant that signals were often obscured (and sometimes shot away). Seymour did not pay attention to what signals the LION was actually flying.

The shooting on both sides was less than outstanding, but nevertheless German shooting was substantially better. Admiral Jellicoe advised Beatty in November 1915 that excessive emphasis on rapid shooting was having an effect on accuracy; Beatty disagreed and the emphasis on rapid shooting remained. Jellicoe did not force the issue <sup>(14)</sup>. The British fire distribution arrangement failed, which meant that at times two British ships engaged one German; thus some German battle cruisers were left to fire unimpeded by incoming shells, and British ships firing at the same target ran the risk of confusing each other's shot. Beatty had not provided his officers with sufficient guidance for them to show initiative when the



The British Squadron at the Battle of the Falklands 8 December 1914.

LION had to fall out of the battle line.

The battle also showed the dangers posed by "flash" i.e. flash cordite fires in or near turrets which could travel down open hatchways and hoists to magazines, causing massive explosions. Both LION and SEYDLITZ experienced such fires (the SEYDLITZ lost two turrets and 200 men), but the organisational responses were different. The German navy, noting the very considerable damage done to SEYDLITZ introduced more precautions regarding the storage and handling of ammunition.

The damage to LION was less severe and as detailed above Beatty did not change his emphasis on rapid shooting. So the poor ammunition storage practices remained. Tellingly, in June 1915 Warrant Officer Alexander Grant objected to dangerous practices on board the LION, and demonstrated to the LION's Gunnery Officer that even after the introduction of more safety precautions the magazines could still supply the main armament with sufficient number of shells. Grant was allowed to introduce more safety precautions but this had no impact on the behaviour of other British ships <sup>(15)</sup>. Filson Young noted that the RN lacked mechanisms to learn from practical experience.

## JUTLAND

In a sense Beatty and the BCF were successful at Jutland on 31 May 1916, although at a very considerable cost. There were signalling failures which meant that the four battleships of the 5th Battle Squadron were not available to support the BCF in its initial clash with the German battle cruisers of the First Scouting Group (FSG) and then later in the battle were exposed to heavy German fire. In the first instance the failure may have been due to the 5th Battle Squadron not seeing the flag signals due to long range (although Flag Lieutenant Seymour should have confirmed that the 5th Battle Squadron was following the BCF and thus be in a position to support it); the second involved poor signalling on Seymour's part. Beatty delayed firing on the FSG despite the fact that a number of his ships had longer range weapons than the Germans; the British could have fired for up to 15 minutes without the Germans being able to reply <sup>(16)</sup>. It is possible Beatty, with his belief in the effectiveness of rapid fire at shorter ranges, wanted to move in as quickly as possible, so he turned quickly towards the Germans (thereby disturbing the aim of British gunners). The BCF again had problems with assigning fire, which meant one German battle cruiser was allowed to fire unimpeded. Two British battle cruisers exploded and sank, probably due to flash (a third was lost later in the battle, likely due to the same cause).

BCF shooting was exceptionally poor and substantially inferior to that of

their German opponents and the Grand Fleet (during the first part of the battle, called The Run to the South, the German battle cruisers scored 22 hits on their British opponents; the British battle cruisers responded with only six hits)<sup>(17)</sup>. Crucially, Beatty neglected to keep Jellicoe informed of events.

Yet, although the BCF was defeated, Beatty did the right thing. He led his remaining battle cruisers towards Jellicoe and the Grand Fleet, thus drawing the German High Seas Fleet into a trap. Unfortunately he did not signal to Jellicoe what he was doing, but Jellicoe realised what was happening. Despite appalling losses, the battle cruisers had acted as scouts and then draw the High Seas Fleet towards potential destruction.

## AFTERMATH

In the aftermath of Jutland Beatty blamed Jellicoe for letting the Germans escape. In fact Beatty's performance at Jutland was poor. Damningly for Beatty, many of the factors that had plagued the BCF for two years reoccurred i.e. fast but hopelessly inaccurate shooting, poor ammunition handling practices, confused distribution of firing assignments between ships and poor signalling.

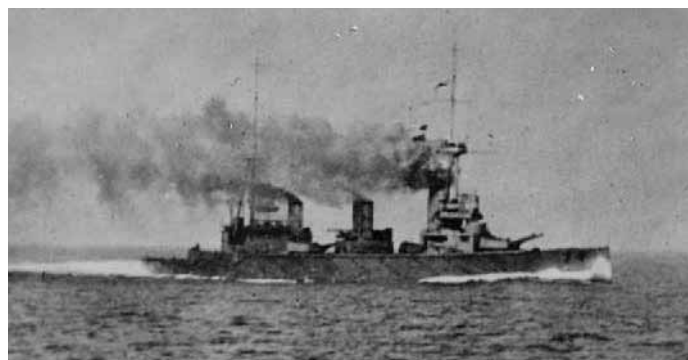
The reason for the loss of three battle cruisers became a major bone of contention. Enquires by the Third Sea Lord, Admiral Turner, and others suggested that sloppy practices rather than poor armour had been the cause of the battle cruisers destruction; in November 1916 the First Sea Lord, Admiral Sir Henry Jackson, advised Beatty that he agreed with this conclusion<sup>(18)</sup>. Beatty took the matter to Jellicoe and the Admiralty and on 24 November Jellicoe (as the new First Sea Lord replacing Jackson) told Turner to withdraw his report (he was then transferred to China). Jellicoe further stated that as far as he was concerned poor armour rather than poor practices and management had caused the loss of the battle cruisers.

Nicholas Lambert says that Jellicoe did this so as to maintain morale; he did not wish to tell the RN rank and file that their officers had been at fault. Beatty defended his performance at Jutland to the last, and in the process attempted to shift much of the blame to Jellicoe<sup>(19)</sup>.

## CONCLUSION

In *Admirals: The Naval Commanders Who Made Britain Great* the historian Andrew Lambert chose David Beatty as one of Britain's ten great naval commanders (not including Nelson), to a considerable extent because of his performance as First Sea Lord after the war<sup>(20)</sup>.

Yet Beatty's poor performance with the battle cruisers suggests that Lambert's views are unbalanced. Lambert's own account of Beatty's career shows that Beatty suffered from profound flaws, and nothing demonstrates this more clearly than his time as commander of the BCF. There was no doubt Beatty could lead. But he was also a consummate self-interested "naval politician" rather than a professional like Jellicoe. His most basic failing was a lack of responsibility for detail. He was aware that there were serious problems with both signalling and shooting but made the wrong decisions on how to deal with them (or ignored the implications). Beatty wanted his initiatives but he failed to train and guide

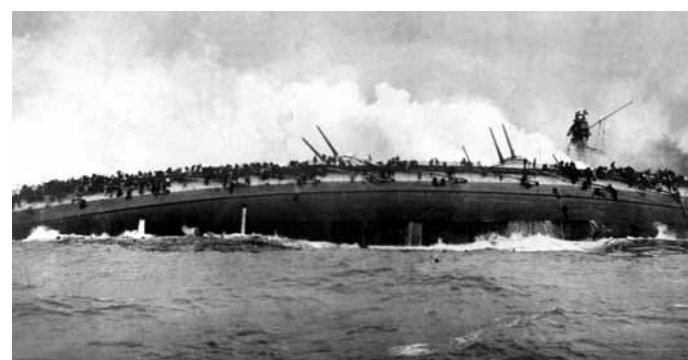


HMS NEW ZEALAND steaming during the Battle of Heligoland Bight.

them sufficiently to allow them to do so.

Beatty was not responsible for the armour design flaws in his beloved Big Cats. Nor was he responsible for technological change which took many by surprise, not just Beatty. The battle cruisers were as big as battleships but substantially faster, so manoeuvring them was unfamiliar. Their speed coupled with the amount of smoke they produced affected both gunnery performance and signalling in unpredictable ways, and the range at which battles were increasingly fought also posed real challenges for gunners. But Beatty was responsible for his ships ineffective and sometimes dangerous practices, and in some cases, such as with regard to poor shooting and negligent ammunition storage, he encouraged them. Rather than examining evidence available from Dogger Bank (particularly with regard to poor gunnery and signalling, and possibly ammunition storage) he persisted with ideas that compromised the performance of the Big Cats, and in three cases led to their destruction and the resulting deaths of thousands of his men.

It is perhaps naval writer John Brooks who sums Beatty up best. In discussing Beatty's performance at Jutland he comments "As the First World War ground on, the British people badly needed a naval hero, and Beatty, square jawed, handsome and with cap rakishly afloat, certainly looked the part. But amongst fighting admirals he cannot be ranked highly"<sup>(21)</sup>. However, Brooks concedes that for his sustaining of the morale of the Grand Fleet towards the end of the war and for his work as First Sea Lord, he should be regarded "as a figure of some stature among British naval leaders."<sup>(22)</sup> ■



The Burning SMS BLUECHER rolls on its side at the Battle of the Dogger Bank, 10 February 1916.

### Notes

- (1) Lambert, Nicholas: *Sir John Fisher's Naval Revolution* Columbia, University of South Carolina Press pp 8-10.
- (2) *Ibid* p.9.
- (3) Brooks J: *Dreadnought Gunnery and the Battle of Jutland: The Question of Fire Control* Cass Series, Routledge, 2006 pp 1-15.
- (4) Massie, Robert: *Castles of Steel: Britain, Germany and the winning of the Great War at Sea* Ballantine Books 2004 p.666
- (5) Gordon, Andrew: *The Rules of the Game: Jutland and British Naval Command* John Murray 1996 pp 44-45
- (6) Lambert, Andrew: *Admirals: The Naval Commanders Who Made Britain Great* Faber and Faber 2008 pp 34-35.

- (7) *Ibid* p.344.
- (8) Gordon *op cit* p.96
- (9) Lambert, Nicholas: "Our Bloody Ships or Our Bloody System: Jutland and the Loss of the Battle Cruisers 1916" *Journal of Military History* 62 (January 1998) p.4ff.
- (10) *Ibid*
- (11) Gordon *op cit* p.46
- (12) Young, Filson: *With the Battle Cruisers* Nabu Press, 2010 p.33
- (13) Massie *op cit* p 266 and Lambert *Admirals op cit* p.357
- (14) Lambert "Our Bloody Ships" *op cit* p.6

- (15) *Ibid*
- (16) Gordon *op cit* pp 96ff
- (17) Massie *op cit* pp 673-4
- (18) Lambert: "Our Bloody Ships" *op cit* p.7
- (19) *Ibid* pp 7-8
- (20) Lambert *Admirals op cit* pp 377-78
- (21) Brook *op cit* p.298
- (22) *Ibid*

The Navy League is intent upon keeping before the Australian people the fact that we are a maritime nation and that a strong Navy and capable maritime industry are elements of our national wellbeing and vital to the freedom of Australia. The League seeks to promote Defence self reliance by actively supporting defence manufacturing, and the shipping and transport industries.

The strategic background to Australia's security is changing and in some respects has become less certain. The League believes that Australia should pursue the capability to defend itself, paying particular attention to maritime defence. Through geographical necessity Australia's prosperity, strength, and safety depend to a great extent upon the security of the surrounding seas and island areas, and on unrestricted seaborne trade.

## The Navy League:

- Believes Australia can be defended against attack by other than a 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 with our allies.
  - Supports a continuing strong alliance with the US.
  - Supports close relationships with all nations in our general area and particularly New Zealand, PNG and the island States of the South Pacific.
  - Advocates the acquisition of the most capable modern armaments, surveillance systems and sensors to ensure that the ADF maintains technological advantage over forces in our general area.
  - Advocates a significant deterrent element in ADF capability enabling powerful retaliation at significant distances from our shores.
  - Believes the ADF must be capable of protecting commercial shipping both within Australian waters and beyond, recognising that this means in conjunction with allies and economic partners.
  - Endorses the control of coastal surveillance by the ADF, and the development of the capability for the patrol and surveillance of all of Australia's ocean areas, its island territories and the Southern Ocean.
  - Welcomes Government initiatives concerning the recovery of an Australian commercial fleet capable of supporting the ADF and the carriage of essential cargoes to and from Australia in times of conflict.
- As to the RAN, the League,** while noting the vital national peacetime tasks conducted by Navy, 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 off both the east and west coasts simultaneously and advocates a gradual build-up of the fleet and its afloat support elements to ensure that, in conjunction with the RAAF, this can be sustained against any force which could be deployed in our general area.
  - Welcomes the announced increase in Defence expenditure to 2% of GDP over the next 10 years.
  - Believes that the level of both the offensive and defensive capabilities of the RAN should be increased and is concerned to see that the substantial surface and sub-surface capability enhancements contained in the 2009 Defence White Paper should survive the forthcoming 2015 Defence White Paper; in particular a substantially strengthened submarine force, 3 Air Warfare Destroyers (AWDs), 2 landing ships (LHDs), 8 new frigates (Anzac class replacements), 20 offshore combatant ships, 6 heavy landing craft and substantial numbers of naval combatant and ASW helicopters.
- Strongly supports the acquisition of large, long range and endurance, fast submarines and, noting the deterrent value, reliability and huge operational advantages of nuclear powered submarines and their value in training our anti-submarine forces, urges the consideration of nuclear power as an option for those vessels.
  - Notes the potential combat effectiveness of the STOVL version of the JSF and supports further examination of its application within the ADF.
  - In order to mitigate any industry capability gap following the completion of the AWD program, recommends bringing forward the start date of the planned future frigate (Anzac replacement) program, recognising the much enhanced capability projected for these ships.
  - Urges that decisions to enhance 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 be implemented.
  - Supports the development of Australia's defence industry, including strong research and design organisations capable of the construction and maintenance of all warships and support vessels in the Navy's order of battle, and recognises the fundamental importance of a stable and continuous shipbuilding program for the retention of design and building skills and the avoidance of costly start up overheads.
  - Supports the efforts by Navy to rebuild the engineering capability to ensure the effective maintenance and sustainability of the fleet.
  - Advocates the retention in preservation (maintained reserve) of operationally capable ships that are required to be paid off for resource or other economic reasons.
  - Supports a strong Naval Reserve and Australian Navy Cadets organisation.
  - Advocates a strong focus on conditions of service as an effective means of combating recruitment and retention difficulties.
- ## The League:
- Calls for a bipartisan political approach to national defence with a commitment to a steady long-term build-up in Australia's 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 NAVY LEAGUE OF AUSTRALIA

# EIGHTH ANNUAL MARITIME AFFAIRS ESSAY COMPETITION 2015

The Navy League of Australia is holding the eighth maritime essay competition and invites entries on either of the following topics:

### TOPICS

- 20th Century Naval History
- Modern Maritime Warfare
- Australia's Commercial Maritime Industries

### CATEGORIES

A first, second and third prize will be awarded in each of two categories:

**Professional**, which covers Journalists, Defence Officials, Academics, Naval Personnel and previous contributors to *THE NAVY*; and

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Essays should be 2,500-3,000 words in length and will be judged on accuracy, content and structure.

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Prize-winners announced in the January-March 2016 issue of *THE NAVY*.

Essays should be submitted either in Microsoft Word format on disk and posted to:

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**Box 1719 GPO, SYDNEY NSW 2001**

or emailed to [editorthenavy@hotmail.com](mailto:editorthenavy@hotmail.com).

Submissions should include the writer's name, address, telephone and email contacts, and the nominated entry category.

*THE NAVY* reserves the right to reprint all essays in the magazine, together with the right to edit them as considered appropriate for publication.



A Royal Australian Navy Clearance Diver emerges from the waters of Pittwater at Palm Beach in Sydney. Clearance Divers are the Australian Defence Forces' specialist divers. Clearance Diver tasks include specialist diving missions to depths of 54 metres, surface and underwater demolitions, and the rendering safe and disposal of conventional explosive ordnance and improvised explosive devices. (RAN)



An Agusta-Bell AB 212 helicopter from the Hellenic Navy ship HS ELLI, sits on the flight deck of HMAS ANZAC to transfer personnel as the ships sail in-company through the Mediterranean Sea. ANZAC was deployed on NORTHERN TRIDENT in March 2015, representing Australia at Centenary of Anzac commemorations in the Mediterranean and engagements across a number of international ports. (RAN)

