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THE NAVY

The Maga ue of Australia

Prelude to the Battle of Tsushima

The Creswell Oration

Infrastructure and the Merchant Marine

THE NAVY – 78 Years Young

The Genesis of the Airborne Anti-Ship Operation

Australia's Leading Naval Magazine Since 1938

Sea Power Ashore and in the Air

2005 King-Hall Naval History Conference

SEA POWER ASHORE AND IN THE AIR

The Royal Australian Navy's Sea Power Centre-Australia, with the assistance of the School of Humanities and Social Sciences, University of New South Wales at the Australian Defence Force Academy, is hosting the fourth King-Hall Naval History Conference, 21-22 July 2005. This will be a major international conference with distinguished speakers invited from Australia, New Zealand, the United Kingdom, and the USA.

The conference theme is 'Sea power ashore and in the air'. Since the end of the Cold War there has been an increased interest in maritime operations in the littoral environment. This conference will contribute to this debate by using historical case studies to explore how various nations and commanders have used sea power to prosecute, influence, and support military operations across the joint battlespace.

General Information

Venue:

Bradman Theatre, National Convention Centre, Constitution Avenue, Canberra ACT

Registration:

Two day conference $200.00 per person

(This includes lunch, morning tea and afternoon tea)

Proceedings:

Conference proceedings will be published and forwarded to all attendees at no cost.

Conference Dinner:

A dinner will be held on the evening of 21 July in the Anzac Hall, Australian War Memorial, Anzac Parade, Campbell, ACT. Cost will be $75.00 per person.

Further Information / Submission of Registration Forms:

Sea Power Centre-Australia Conference Co-ordination Cell

Department of Defence
CANBERRA ACT 2600
Tel: (02) 61276514
Fax: (02) 61276521
E-Mail: Seapower.conferences@defence.gov.au

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NAVY

THE NAVY

Volume 67 No. 3

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The Navy League of Australia

FROM THE CROW'S NEST

LEAVE IT TO THE EXPERTS

During the time of the previous edition of *THE NAVY* the ADF suffered a terrible disaster. Nine service members, on a mission of mercy, were tragically killed when their Sea King helicopter crashed in Indonesia. The Sea King, *Shark 02*, was from HMAS KANIMBLA, which was rendering humanitarian assistance after a devastating earthquake in the region. KANIMBLA had actually just come from Singapore where the crew took a well-earned leave after providing outstanding assistance to the people of Indonesia in the wake of the Boxing Day Tsunami tragedy weeks before.

Investigations into air accidents take time. The complexity of modern aircraft and the requirement to be accurate dictates the need to be methodical. Professional and experienced aircraft investigators sift through wreckage, research maintenance records, study other accidents involving the type of aircraft and take eyewitness statements in order to uncover the precise reason for the accident. The results of which are then published in order to prevent a similar event from reoccurring.

However, less than 24 hours after the tragedy one local defence association had its spokesperson in front of a TV News camera claiming the accident was a result of the Government not replacing the Sea King earlier. This display, while probably well intentioned, could have been easily misinterpreted by many as a sensationalist headline grabbing exercise in the interests of 'being seen'. The message would then be lost and the tragedy cheapened. The effect of this sort of commentary on the families, maintenance personnel and others connected with the victims would have been detrimental to say the least. Commentary such as this is best left to the experts, and in the fullness of time.

What the media failed to note in its reporting of the Sea King fleet is that the helicopters underwent an extensive refurbishment in 1995 at the direction of Navy. This was done to extend their service life to 2008, something that can be done with helicopters far more successfully than fixed wing aircraft. Navy would not intentionally place its people at risk due to outdated and thus unsafe equipment, as suggested, in order to save a 'few bucks'. The five other crashes involving the Sea King in RAN service early in its career were the result of transmission and drivetrain failures, not Government or Navy procrastination.

The Sea King is in service with many armed forces and civil charter companies around the world and enjoys a good reputation. This is one of the reasons why one will see a Sea King (albeit American built) flying the skies of Washington DC daily with the US President (and his family) on board.

By Themistocles

FROM OUR READERS

Dear Editor,

The inside back cover of *THE NAVY* magazine April-June 2005 Volume 67 No. 2 issue features a fine RAN photograph of the patrol boat NUSHIP ARMIDALE, the first of her class as detailed in the Hatch, Match and Dispatch section of the same issue.

I note with interest, that ARMIDALE's pendant number is 83 which will coincide with HMMS HAWKESBURY's number 83. If the patrol boat pendant numbers follow in sequence, will we see the following numbers 84 to 87 as NUSHIPS, BATHURST, BUNDABERG, ALBANY and PIRIE also coinciding with HAWKESBURY's sister ships the other Huon Class Coastal Minehunters HMA Ships NORMAN 84, GASCOYNE 85, DIAMANTINA 86 and YARRA 87?

Frank McCarthy
Gisborne, Victoria.

Dear Frank,

Well spotted. You are correct, ARMIDALE shares the same number. The other new patrol boats you mention will also share a number with their minehunter cousins. The official response from Navy is that there will be a P in front of the patrol boat's number (to denote a Patrol Boat) and an M on the Minehunters to denote a minehunter in the official international register of ship's hull numbers. Why that is the case? We haven't been able to find out yet.

Editor

Dear Editor,

Just a comment on Ian Johnson's letter in the April-June edition. Whilst I can see his reasoning in the use of MURCHISON for an Armidale class patrol boat, I think the name VOYAGER should be reserved. The upcoming three Air Warfare Destroyers would be most appropriately named VAMPIRE, VOYAGER and VENDETTA, destroyers of past years. And in the Med in WW II they most definitely had an Anti-Air Warfare role!

I am aware 'The Bat' (VAMPIRE) is still in existence at Darling Harbour, but not as a commissioned warship.

Yours sincerely,

Barry Evans

The Navy League of Australia's Annual 'Creswell Oration'

GIVEN BY VICE-ADMIRAL CHRIS RITCHIE, AO, RAN CHIEF OF NAVY

Tuesday 1st March 2005 at ANZAC HOUSE, Collins Street, Melbourne

"It is an honour to be asked to give this address, noting that we are celebrating 104 years of Australian naval history. I will reflect on the past as requested but without apology I will use much of my time to reflect on contemporary naval issues.

It is also quite an honour to be introduced by the grand daughter of Vice Admiral Sir William Creswell. I am the 27th officer to command the Royal Australian Navy, and Vice Admiral Creswell was the first. The officers who have served between us have had a variety of titles, from Creswell's initial appointment as Director of the Commonwealth Naval Forces from 1904 to 1911, and then the First Naval Member of the Australian Commonwealth Naval Board until 1919. Thereafter, command of the Royal Australian Navy entailed being the First Naval Member of the Board and the Chief of Naval Staff. After the abolition of the Board in the 1970s, the position was known only as the Chief of Naval Staff, until the mid 1990s when it changed again to be the Chief of Navy. It seems to me that, sentiment aside, this is the most appropriate title given the role of the position. I will come to that in a short while.

While the name of the position held by the person with responsibility and authority for the command of the Royal Australian Navy has changed over the past 100 or so years, a brief look at some of the challenges Creswell faced in his time at the top, reveals to me that some things have not changed at all. However, before I move into that theme, I would like to begin with some reflection on the four previous Creswell orations.

I note that previous speakers in exploring the early history of our Navy have in one way or another sought to identify the *"father of the Navy"*. Jim Dickson, Brian Gibbs and Raydon Gates selected William Rooke Creswell, which is indeed as conventional wisdom would have it. Peter Briggs on the other hand spoke of Jacky Fisher, Alfred Deakin, Paymaster Manisty and engineer Clarkson. He took an unconventional view but then again he would because he is a submariner. Such different ways of tackling a problem have made our Navy great!

It is my view that this difference of opinion is actually quite instructive because it highlights the nature of successful large and important institutions and organisations. That nature is that there is inevitably a dominant figure who assumes the identity of the organisation and espouses its vision. That is his job, that is why he is put in charge and that is perhaps what Creswell did. But behind him there must be a veritable factory of talent, making the bullets for him to fire and, to be really successful, political backing for the cause. One-man bands are few and far between and they do not sound so good. Three of our orators have highlighted the leader, one has turned the spotlight on the backroom boys.

If you agree with this view you might see the direct translation to today.

Of further interest to me is the way in which the achievements of the Creswell team and his successors and their teams, allow the Chief of Navy to work today. I have nowhere near the direct authority over the things that make the Navy that Creswell had. Other organisations acquire the ships and equipment and provide for their maintenance and sustainment. Others house, feed and clothe my sailors ashore. On operations our ships and aircraft work to a joint commander. Nevertheless, I am still the professional head of the Navy, and I alone set the course for its future and take the lead in communicating that vision. I remain, importantly, the statutory head of the Navy. Without the direct authority that Creswell had I can mould the Navy of the future because the position is held in high esteem. It is a different way of working that I know is often lamented by those who long for the past. That it works is only because of the very firm foundations laid in Creswell's time and built upon by all those who have served since. But rest assured, it does work.

That was a bit of an aside but one that I would like the wider community to understand. To return to my earlier point, no matter where you sit in the paternity debate, the Creswell orations have served to bring our early history into sharper focus. They have reminded us of the struggle that was necessary to bring the Navy into being and the dramatic achievement that took place between 1907, when the argument turned in Navy's favour, and 1913 when the first Australian Fleet entered Sydney Harbour. I congratulate John Wilkins (President Victorian Division of the Navy League of Australia) for his lead in instigating these orations and would hope that over time they spread to a wider audience.

HMAS ADELAIDE 'lets fly' with a Standard SM-1MR anti-aircraft missile. While ADELAIDE and CANBERRA will be decommissioned early their four sister ships will be upgraded with Standard SM-2MR as the current batch of SM-1MR missiles have reached the end of their service life, and the fact that new missiles are impossible to obtain. (RAN)

I now intend to briefly cast my mind back to Creswell's time before making some comparisons with the debates over the future shape and role of the Navy today.

Firstly, some background. On 1 January 1901, the Governor General became the Commander in Chief of Commonwealth naval and military forces pursuant to section 68 of the Commonwealth Constitution. The power to make laws for the naval and military defence of Australia rested with Federal Parliament under section 51(vi) of the Constitution. On 1 March 1901 the States transferred their forces to the Commonwealth, the maritime arm of which became known as the Commonwealth Naval Forces.

The ships were old, the budget was small. Successive British naval commanders provided an assurance that the Royal Navy could be relied upon to provide maritime protection. Australia paid a subsidy towards maintaining Royal Navy vessels based here and left matters of maritime policy and strategy to the Admiralty in London. Local interest was mainly focussed on port fortifications.

Creswell recognised that, while the prevailing wisdom about Australia's defence emphasised land forces, an attack by sea or maritime interference with Australia would be devastating. He famously noted in a 1902 parliamentary report that:

> *"The spectacle of some 5,000,000 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".*

What he was getting at was Australia's trade was worth £170 million at the turn of the century – and it required transportation by sea. These trade figures were greater than those of Spain, Portugal or Japan, but from a country with a fraction of their population. Creswell argued that any restriction to communications or seaborne trade would result in economic and industrial paralysis.

For the first decade of Australia's federation, Creswell passionately advocated the development of an Australian fleet. He was constantly rebuffed until the end of 1907 when Prime Minister Alfred Deakin announced a scheme to acquire some vessels for coastal defence. The decision was supported by the new government of Deakin's successor, Andrew Fisher. The first ship built as a result was the River Class destroyer, HMAS PARRAMATTA. She was launched on 9 February 1910 in Scotland and was commissioned on 10 September 1910. As we all know, more ships followed and by the outbreak of war in 1914 the RAN was well positioned to achieve some early success in independent operations.

Looking back at the life and work of Vice Admiral Creswell, I can well imagine the pains he had to go to in order to justify the necessity for the Navy he saw as necessary to combat the threats of the time.

The USN Arleigh Burke Flight IIA class destroyer USS WINSTON CHURCHILL. One of the contenders for Navy's SEA 4000 air warfare destroyer program is a smaller version of the Flight IIA version of this USN destroyer. (USN)

Since Creswell's time there have been other periods of great debate when the nature of Navy's development has been called into question. In my time the carrier debate of the late 70s early 80s is the best example. Recently, the 23rd anniversary of the Government announcement to buy HMS INVINCIBLE to replace HMAS MELBOURNE occurred. We all know that that did not happen and as a result the nature and capability of the Navy changed.

In the period 2000 to the present we have been through another such debate – some of you may be unaware of that. The capability discussions related to Navy have primarily focussed on the need for and acquisition of large aviation capable amphibious ships and very highly capable Air Warfare destroyers, themselves large ships. Government has decided firmly in favour of these capabilities. Not to do so would deny Australia the guaranteed use of the sea as the highway that it properly is. Instead it would become a moat which some perhaps prefer. But yet the dissidents seem determined to press their case and perhaps to weaken Government resolve. Greg Sheridan, not I hasten to add, one of those dissidents, opined in *The Australian* recently that the battle over the shape of our Defence Forces is really a metaphor for the battle over the future of Australia. *"Are we strong, self confident, willing to take care of ourselves and capable of making a contribution globally"* he asked, *"or are we timid, frightened, inoffensive stay at homes who pullulating timidly (as A. D. Hope put it) hope that history will never knock on our door?"* After reaching for his dictionary to get to grips with pullulating (breeding, multiplying) I am sure that Creswell would have had some empathy with that statement.

To be more specific about the current debate, some of you may have read a recent article in *The Sydney Morning Herald* and *The Age* questioning the acquisition of the three Air Warfare Destroyers due to enter naval service from 2013. For those of you who may not have read this article – and I hope that very few of you would be greeted by a thick wad of press clippings on your desk every morning – let me do a quick summary of the issues raised.

The article argued that the main reasons for acquiring the Air Warfare Destroyers are because the Navy has had destroyers in the past, and because big grey ships are an icon of national power. It noted that a 6,000 tonne ship is bigger and more complex than anything the RAN has ever had before, so we are not genuinely replacing the DDGs, the last of which was decommissioned in 2001. It concluded by asserting that fighter aircraft provide a more efficient and cost effective way of defending the fleet from air attack.

Let me start by saying that I have no doubt that the Air Warfare Destroyers are absolutely vital for the RAN's future fleet. As the current custodian of Australia's naval assets and defences, I have a responsibility to argue for the procurement of capabilities which reduce the military risk for operations we cannot foresee at this point. As in Creswell's day, the budget is not unlimited. Accordingly, close analysis is required to align the conceivable threats with the most cost effective capability outcomes. To explain to you why I believe that the Air Warfare Destroyers fulfil this requirement, I would briefly like to outline what their role in our national defence will be, and why this is so important.

Most of you will be well familiar with the concept of Sea Control – the ability to gain and maintain freedom of action in

An Army Blackhawk lifts off from the deck of HMAS MANOORA. The two aviation capable LPA's have proved their worth time and again. Lessons learnt from their utility have been applied to Navy's new amphibious ship requirement which will see two 27,000 tonne aviation capable ships in service by the end of the decade to replace the two LPAs. (RAN)

an area of the sea for one's own purposes, and if required, to deny the use of this area to others. Sea Control today means not just the sea, but the area below the surface, the airspace above, the electro-magnetic spectrum, and nearby coastal land.

Recent Defence policy has focussed on the uncertain and unstable global strategic environment, and the likelihood that Australia's national interests could be affected by events far from our shores. This has lead to a renewed emphasis on meeting trouble before it reaches our shores. With this aim in mind, as an island nation, Sea Control would be critical for all future ADF operations. Indeed, the successful deployment of multi-national forces in East Timor and the Solomon Islands would not have been possible without Sea Control. As the then Major General Peter Cosgrove said at the time,

"Another military blinding glimpse of the obvious is the utility of sea power in the East Timor operation. The persuasive, intimidatory or deterrent nature of major warships was not to me as the combined joint force commander an incidental, nice to have 'add on' but an important indicator of national and international resolve and most reassuring to all of us who relied on sea lifelines".

The lessons learnt in these joint amphibious operations, together with in depth experimentation and analysis, have lead to the development of a very clear picture of the future circumstances in which Navy will be required to exercise Sea Control.

Navy must possess the ability to lift, to lodge, to sustain and withdraw a Combined Arms Battle Group consisting of an embarked force of about 2,000 personnel, wherever the Government needs to deploy it. Equally, we must be able to independently protect that force in transit and in theatre. Whilst it is disembarked, Navy provides the ability to reduce the size of the footprint ashore by providing command and control facilities and logistics support from the sea. The Air Warfare Destroyers are the ideal platform to provide physical protection for amphibious forces and to maintain the Sea Control necessary to achieve these tasks; in the approaches to our continent, in our immediate neighbourhood, or in contributions to alliance operations further afield.

As I mentioned earlier, the recent criticism of the Air Warfare Destroyers emphasised the role of fighter aircraft in providing maritime air defence to operations. What this comment fails to recognise is the complexity of area air defence due to a broad range of environmental, geographic and threat circumstances which make it difficult to rely solely on any one capability solution. The Defence Capability Review, which clarified the government's intentions with respect to long term defence acquisitions, was a cohesive and holistic strategy for the future force structure of the Australian Defence Force. This list of the ADF's future major capital projects was developed in a coordinated manner. As a result, the potential of the various capability components of this package will be maximised by working seamlessly and together.

It is intended therefore that the Air Warfare Destroyers would work closely with the Joint Strike Fighters, the Airborne Early Warning and Control aircraft, the Over the Horizon Radar, the Global Hawk and ground-based air defence systems. A combination of these capabilities would provide a continuous, comprehensive and layered air and missile defence umbrella for a deployed force.

I willingly acknowledge the fundamental role that fighter aircraft play in air defence. Among other things, they are extremely valuable for the outer layer of defence in a maritime task group. However, we also need the ability to defend against long-range cruise missiles launched from ashore, from ships, from submarines or from aircraft and for this we need long range air surveillance radars, long range missiles with C2 systems, multi-channel fire control radar, and we need self-defence weapons and counter measures systems. These capabilities are inherent within deployed maritime forces.

Another inherent characteristic of maritime forces is our ability to operate considerable distances from home. Depending on where we are called to combat, fighter aircraft may not be available if air bases are denied in the forward operating area. In the absence of the necessary land-based infrastructure to support fighters, the Air Warfare Destroyers would be able to provide high-level autonomous air defence for protracted periods.

Even where fighter aircraft are available to participate in a joint force, limitations in countering multiple attacks again demonstrates the problem with being singularly reliant on one solution. Similarly, there is no guarantee that sufficient aircraft would be available to provide the required level of protection – they may be needed for other tasks. In such a case, the Air Warfare Destroyers would enable surveillance aircraft to continue to operate in the absence of fighter escorts due to their ability to safely retreat to the protective umbrella of the ship's protection once a threat is detected.

The other main criticism made of the Air Warfare Destroyers is that they are bigger and more powerful than what they are replacing – the DDGs and the FFGs. This is true, however this is a positive which goes beyond that of pomp and pride. Their substantial size will give them greater range, flexibility, endurance, sea keeping qualities, survivability, adaptability to modification or upgrade through life as new technology or threats emerge.

Furthermore, while our frigates have given us great service over many years, ships of that size simply cannot provide the sustained area air defence that we will require. The ANZAC Class frigates fitted with the Evolved Sea Sparrow are capable of looking after themselves and defending against threats in close proximity. However, they do not provide an adequate area air defence umbrella that will be able to protect our other high value assets – amphibious ships, their aircraft and deployed forces.

Four of our FFGs are being upgraded with the SM-2 missile to fill the existing air warfare capability gap to provide us with an interim air warfare capability. However, even with this enhanced capability, the FFGs are only able to engage two

air targets simultaneously, whereas many countries have the ability to program multiple missiles which could arrive simultaneously and swamp the ship's defences. In any case, these ships are aging – the first of the class, HMAS ADELAIDE, was commissioned in 1980, and they must be replaced over time.

Last year, the Minister for Defence announced that the Air Warfare Destroyers would be fitted with a variant of the US Aegis air warfare system. Not only will this increase our interoperability with our closest allies, but it is the most sophisticated air defence system yet produced. This means that the Air Warfare Destroyers will be able to remain well beyond the range of most anti ship missiles, yet be able to destroy hostile aircraft with no advanced warning to those aircraft that they are being engaged.

The Minister has also discussed the possibility of upgrading the Air Warfare Destroyers to the next generation of missiles, the SM-3, which may be used for Theatre Ballistic Missile Defence. I don't wish to comment on this, but suffice to say that the Air Warfare Destroyers will be serving Australia for at least three decades after commissioning. In order to remain an ongoing return for the investment we put into them, we would definitely want them to be big and adaptable enough to be able to be modified or upgraded in the future. Of course, as we respond to changing strategic circumstances, we may find it is necessary to upgrade our capabilities, and the Air Warfare Destroyers will allow us to do so.

Despite the immense combat power located in the Air Warfare Destroyers, their utility is not limited exclusively to warfighting – unlike other forms of defence. Naval vessels are fundamentally flexible in their use of force, and are able to rapidly change roles across the conflict spectrum as the prevailing operational situation requires. From naval diplomacy to peacetime constabulary duties, to high intensity operations and power projection, our ships have amazing mission versatility.

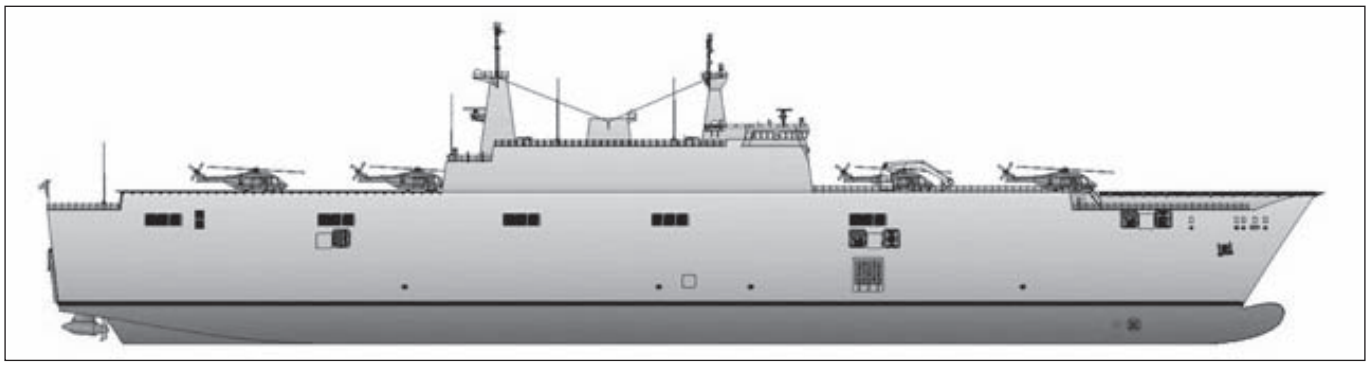
Through the force restructuring process, I have consistently said that high intensity operations must remain our basic force determinant. By preparing for the most difficult of circumstances, any other operation will be easy. Obviously the reverse does not apply. The Chinese military theoretician Sun Tzu nearly two and a half thousand years ago in his treatise on the Art of War said that "Supreme excellence consists of breaking the enemy's resistance without fighting". The sheer power of the Air Warfare Destroyers may reduce the likelihood of actual combat, which is surely an admirable aim in anyone's books.

There are other issues for debate. The size of the amphibious ships has been challenged with the notion that three smaller ships are better than two large ships. I can tell you that the size is dictated by two issues. The task to be done and the resources available. The task is to lift 2,000 men and their vehicles and equipment and to land them simultaneously in company strength by helicopter. This dictates in turn the size of the deck and the number of aircraft. Three smaller ships than those we propose cannot achieve this. On the issue of resources, three ships of say 13,000 tons are 30% more expensive to buy, man and sustain than two of 20,000 tons - and far less capable.

The final point of debate is far healthier for Navy. It is about where the ships will be built and who will build them. I am sure my concerns here are akin to those of the men who advised Creswell. I am interested in the continuation of a strong, viable ship repair, maintenance and modification capability in this country on both east and west coasts. Any solution that contributes to those goals is fine by me.

There is one final point I wish to make that has the potential to be divisive, particularly amongst the more traditionally minded. We will find in the next ten years or so that people will be harder to come by than ships. We will find that our ships can stay at sea far longer than we can reasonably expect our people to. We will find that traditional shore-side employment for many, particularly the more junior is disappearing as we commercialise all forms of shore support. The notions of one ship one company and of the sea/shore roster will have to disappear if we are to give guaranteed respite, geographic stability, job satisfaction and some social certainty to our people. Multiple crewing concepts whereby a ship can be served by more than one crew will be progressively introduced. We may end up with a potentially numerically smaller Navy in terms of people, but one that has a much larger seagoing footprint from the same number of ships. Many of our people will have primarily seagoing careers and they will be rewarded accordingly. This is a cultural change that we must make.

In conclusion. This address has differed from its predecessors in that I have shifted the emphasis from the difficulties encountered in the Navy's early years to the very similar concerns we may face as we seek to position Navy for the future defence of this great, maritime nation. I hope I have been able to give you some insight into the issues as I perceive them. Perhaps the fact that I see similar threats ahead in the barbs and arrows of our detractors says that we have not come too far in our national understanding of the importance of the sea to Australia. That is probably a good subject for another series of lectures. Whatever the truth I again commend those responsible for reminding us of our debt to our naval forefathers and just as importantly, our duty to keep the nation engaged in its maritime defence. We must be vigilant in seeking to ensure that Australia avoids in Creswell's words, *"the ordinary consequence of a policy of naval impotence"*."



A side view of the Spanish LPD that is currently being considered by the RAN for its new amphibious requirement.

The Genesis of the Airborne Anti-Ship Operation

AN ATTACK BY TORPEDO PLANES ON THE HIGH SEAS FLEET

By David Hobbs

Considerations forwarded to the Admiralty by Admiral Sir David Beatty, Commander-in-Chief Grand Fleet on 11 September 1917 and their results.

It has been argued that the attack on Pearl Harbor by Japanese carrier-borne aircraft owed something in its conception to the British attack on Italian battleships in Taranto a year earlier. Whilst the latter would have been reassuring to the Japanese, the truth is that both attacks owed a great deal to the Grand Fleet's Great plans to attack the German High Sea Fleet in its harbours. At the time of the Armistice on 11 November 1918 these were within days of implementation and would have been revealed to the Japanese by the British Naval Air Mission under the 'Master of Sempill' after the war.

Admiral Beatty stated, in his covering letter to the Admiralty, that the planned attack had many difficulties to overcome but he believed strongly that they were not insurmountable. Subsequent events, in a different war 23 years later, were to prove how right he was.

THE OBJECT OF THE ATTACK

U-boats needed to be prevented from sailing from their harbours into the open sea. Mines, blockships or constant patrols by cruisers could achieve this but they would only be effective if the enemy was unable to remove them. So long as the Germans had a force in the German Bight superior to any which the British could permanently maintain there, the obstacles could be removed and submarine movements could not be limited. It was, therefore, of critical importance to neutralise the High Seas Fleet in its harbours.

Tactical aircraft operating from aircraft carriers and armed with torpedoes were assessed by the Grand Fleet Staff to be the best solution. They had to be produced in large numbers and used in masses "with the full benefit of surprise".

THE ATTACK IN DETAIL

The proposed attack was to be by as many machines as possible, and not less than 121, launched from "specially fitted carrier ships" operating about an hours flying time from the target. The launch position was to be reached at or before nautical twilight and the strike aircraft were to be flown off from the ships in groups of 40 so as to reach the target area in strong forces in quick succession. Their objectives, in order of priority were to be: -

1. Battlecruisers and battleships, including old battleships.
2. Dock gates and floating docks.
3. Light cruisers
4. Torpedo craft, both surface and submarine.

After discharging their torpedoes, the attacking aircraft were to use front guns to defend succeeding flights against interception by enemy aircraft and to suppress anti-aircraft guns with strafing fire. When the strike force commander decided that the operation had been completed, the aircraft were to proceed to a rendezvous with the carriers off the Dutch coast. The waters off Vlieland, to the west of Terschelling were suggested as giving a lee from easterly or southerly winds whilst being at a distance from the launch position that the carriers could cover whilst the aircraft were airborne.

In addition to the torpedo aircraft, H12 flying boats were to take part in the attack using 230lb bombs against floating docks, engine houses, magazines and submarines in the basin where they presented a mass target moored abreast each other. The flying boats would aim to attack at the same time as the torpedo aircraft, helping to saturate the defences but to do so it was thought that they would require navigational assistance from small surface craft spaced out across the North sea showing lights upward. They would have insufficient fuel to return to their bases in the UK and so would need to alight next to destroyers off the Dutch coast and refuel from them. Those that could not make this rendezvous were to intern themselves in Holland.

THE AIRCRAFT CARRYING SHIPS

With accurate foresight, the Grand Fleet planners believed that 'ordinary merchant ships' could be modified to operate torpedo aircraft by building flight decks onto them. If each such ship could carry 17 aircraft, eight carriers would be required to carry the 121 aircraft strike force plus two fighters in each carrier. Admiral Beatty wanted to carry out the attack as soon as the aircraft, the carriers and their crews were trained and ready in all respects.

Such an operation would, to a certain extent, be dependent upon weather and might be delayed by a succession of gales. It was, therefore, recommended that the basic forces be increased by at least 25%. This would have the effect of increasing the strength of the attack to mitigate the effects of the lessened chances of maintaining secrecy over a longer timescale. The two fighters in each carrier were intended to destroy any Zeppelin scouts that might attempt to locate the force.

Each carrier was to be capable of flying off at least five aircraft in very quick succession so that a complete force of at least 40 can get away in company from eight carriers. Subsequent flights should be flown off with the minimum delay in order that attacks could be made in quick succession. The ships taken up for conversion were to be the fastest available. In addition to their arrangements for operating aircraft, the ships were to be fitted with side blisters and paravanes for protection against submarine attack and mines. The Grand Fleet Staff suggested that armed merchant cruisers,

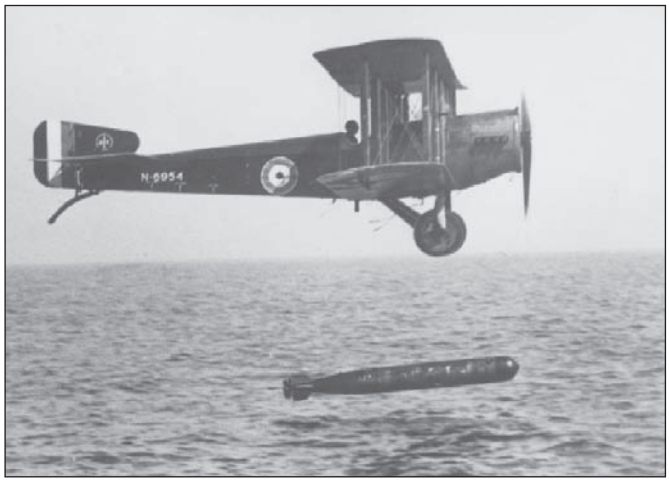
withdrawn from the 10th Cruiser Squadron, which formed the Northern Patrol, would be suitable for the purpose.

TIMESCALE

Timing was seen as the most important single factor and the Admiralty was urged to identify suitable ships and arrange for their conversion as quickly as possible. The longer conversion took, the more likely it was felt that the enemy would learn what was intended and considerable pains were recommended to conceal the ships' true purpose. Their use with aircraft could hardly be disguised but their destination could be obscured by fittings such as fans, ventilation and awnings, which would suggest employment in the Persian Gulf or Egypt. No deceptive measure was felt to be too trivial to adopt and detailed planning even suggested delaying and censoring mail to make it appear that it was having to be sent to and from the Middle East.

THE SOPWITH T1

The aircraft chosen for the attack was the Sopwith T1. The name "Cuckoo" was unofficial and reflected the intention to "put an egg into someone else's nest"! For obvious security reasons, it was not used until after the Armistice and the aircraft were generally referred to as "T" machines. 121 were to take part in the initial attack and it was felt that "many more" should be constructed to cover the inevitable losses during operational training. A larger force would also be able to renew the attack as early as possible. Even if the initial attack should be completely successful, it was felt that there would still be much work for aircraft of this type in attacking enemy merchant shipping in the Elbe, at Emden and Bremerhaven. "No limit should, therefore, be put upon construction, but a minimum of 60% spare should be immediately aimed at".



A Sopwith T1 dropping an anti-ship torpedo. The unofficial name of "Cuckoo" was given to the Sopwith T1 and reflected the intention to "put an egg into someone else's nest"!

THE WEAPON

The weapon to be carried by the "T" machines was a specially designed torpedo weighing 1,000lb. Like other torpedoes in Royal Navy service, it had a diameter of 18 inches and was the product of a specialist design team with a great deal of practical war experience. The warhead comprised 170lb of "Torpex" detonated by a contact pistol on impacting the side of a ship target. In comparison with torpedoes in use with submarines and surface ships this was about half the size of warhead, hence the need for the five aircraft flights to attack each target scoring as many hits as possible. They would hit below the waterline of a battleship, below the armoured belt and cause considerable flooding and damage. Had the surprise attack succeeded, as it was to do at Taranto and Pearl Harbor, ships in harbour would be unlikely to be in an action state with watertight doors closed and little of their machinery would have been running, thus reducing the number of pumps available to counter flooding. For follow-up attacks, the "T" machines were to be capable of carrying 500lb bombs instead of torpedoes.

ASSEMBLY AND DEPARTURE OF THE CARRIER TASK FORCE

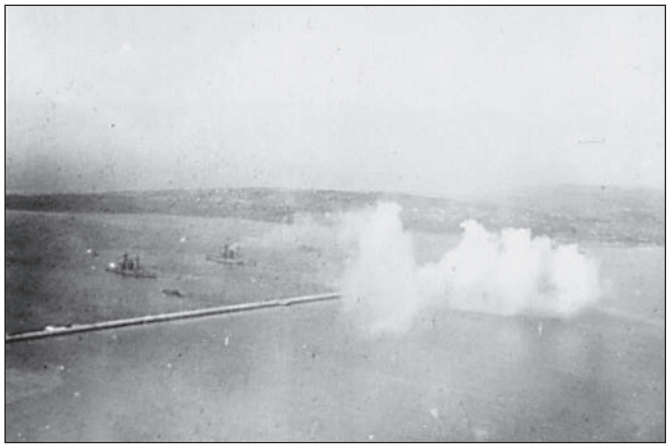
As soon as the carrier task force had worked up to operational efficiency in Scapa Flow it was to proceed to its point of departure. The Wash was suggested for this purpose as it offered a large sheet of water, out of immediate touch with towns or shipping, where practice could be continued until the conditions for the attack were just right. The similarity with the Imperial Japanese Navy's use of Hittokapu Wan, Etoforu, prior to the attack on Pearl harbour in 1941, is obvious. The chosen launch position was off Ameland, close enough to the Wash for the carriers to make nearly the entire passage in darkness with a speed of only 12 knots. A force of cruisers and destroyers would provide close escort for the carriers and German light forces in Emden would be blocked by mines laid in the hours of darkness before the attack was launched. A group of light cruisers would prevent these mines being swept and intercept any German light forces that managed to put to sea. The cruisers themselves would carry aircraft to give warning of any enemy movements in the Ems River. The Grand Fleet at sea would provide distant heavy cover.

INTELLIGENCE

The actual disposition of warships was, if at all possible, to be available to the officer who would lead the attack but air reconnaissance was not to be used to achieve this as it was feared that it would raise enemy suspicions of an impending attack. Follow up attacks were to be made as soon as possible after the first with the aim of destroying gates in the Kiel Canal to prevent ships from returning to the western harbours from Kiel.

TACTICAL CONSIDERATIONS

It was stressed that attacks on individual ships were to be made as decisive as possible. One torpedo hit might be insufficient and each five aircraft unit, under its Flight Commander, was to be trained to act together, developing its whole attack against a single ship. The size of the attack force was intended to destroy a force of 24 capital ships and if intelligence were to show that this estimate was too low, the size of the attacking force would need to be increased. Detailed examinations of tidal conditions and the positioning of ships anti-aircraft guns were made. Thus, if guns were mounted aft, a low flying attack from seaward on a flood tide would provide advantages. A low tide would also help, enabling dock gates to be attacked and destroyed more effectively. The "T" machines were each to be fitted with a single "front gun" and 150 rounds of ammunition so that, once their torpedo was dropped, they could escort subsequent attacking aircraft and/or strafe German repair parties as they attempted to prevent ships from sinking.



A mock attack using "T" machines was made on the Atlantic Fleet at its moorings in Portland Harbour during 1919. Note the use of smoke bombs to cover the attacking aircraft from anti-aircraft fire.

DUTIES OF THE WING COMMANDER

The attack force commander would lead the first wave of 40 aircraft. Having seen how that went, he would give directions to the succeeding squadrons. He would not carry a torpedo but would have increased fuel and a consequently longer time on task. His aircraft would be distinguished by special marks or a unique colour scheme and a special code of signals was prepared to enable him to pass his instructions to the attacking aircraft as they arrived in the vicinity of the targets. He would also be in tactical command of the H12 flying boats while they were in the target area and they would need to understand his signals and act on them rather than any previous instructions which might no longer be valid.

ADMIRALTY REACTION

Admiral Beatty's detailed plan was forwarded to the Admiralty in early September 1917. The response came a fortnight later from the First Sea Lord who was, at the time, responsible for the operational control of all British and Empire fleets throughout the world. In outline it was positive and noted the steady increase in the number of aircraft which could be taken to sea in the Grand Fleet, especially since the arrival of Furious. Squadron Commander Dunning had just carried out the world's first landing by an operational aircraft on an operational aircraft at sea in her and plans were being made to equip her with a landing deck aft in addition to the forward deck on which Dunning had landed. Given this increase, the Admiralty felt able to offer the new carrier Argus for "T" machine operations on her completion, expected to be in mid 1918. She was to be able to carry at least twice the number of aircraft requested for a single merchant ship conversion. Further, an order was placed for 100 "T" machines with delivery due to commence in April 1918, continuing at the rate of 10 per week after that. 200 of the new aircraft torpedoes were also ordered.

This was all positive but the Admiralty felt unable to offer Beatty the number of converted carriers he wanted. In addition to Argus, other hulls were earmarked for construction as, or conversion to carriers but the attack could not be on the scale the Grand Fleet Staff wanted.

OFFENSIVE OR DEFENSIVE – WHICH IS THE BEST OPTION?

The core of the Admiralty's argument not to convert eight merchant ships into aircraft carriers was that hulls could not be spared from their existing duties. Those ships already converted into Armed Merchant Cruisers were needed for defensive patrol work and mercantile hulls were needed to carry vital war material to Britain. (The same mistaken argument was used to delay the construction of escort carriers in the first years of World War II). Admiral Beatty countered this with an argument in favour of offensive action that is as valid today as it was then. In a letter dated 7 October 1917, he stated

> *"…I have given much consideration to the question of air attacks from the sea, on a large scale, against enemy naval bases. Besides being one of the few ways in which offensive action against the German Fleet is possible, it is one of the few ways in which our command of the sea can be turned to active account against the enemy. It is fully realised that the requirements in aircraft carriers can only be met at the expense of other important services, but it is urged that the claims of the offensive should take precedence. Successful operations of the nature indicated would almost certainly curtail enemy activity against trade, and so reduce the calls for protection. Every effort should be made to have the ships ready for service by April 1918. A sustained air offensive on the scale proposed would impose upon the enemy the necessity for active measures of defence. Attempts to attack the carriers and their covering forces might well lead to actions of increasing magnitude involving their heavy ships, thus affording opportunities that have, hitherto, been denied to us".*

In reply, the Admiralty stated that

> *"…with reference to your remarks on the general question of an offensive by air from the sea, it is accepted by Their Lordships that, under existing circumstances, that the air presents the greatest facilities for conducting an offensive against the enemy's vessels and bases, and the possibilities of developing such an offensive in the future are being fully considered. My Lords are fully alive to the importance of air attacks against the enemy's North Sea bases and are determined that the possibilities of such attacks from seaward shall be given full consideration and be correlated to the general scheme of operations".*

THE FLYING SQUADRON

The eight merchant conversions did not materialise but in 1918 the Grand Fleet got a Flying Squadron under Rear Admiral Phillimore, the first Admiral Commanding Aircraft (ACA). By the autumn it comprised ARGUS, FURIOUS and VINDICTIVE. The former was the world's first true carrier with a continuous flight deck from bow to stern, the latter was a cruiser built to a standard similar to FURIOUS with decks fore and aft but with a bridge and funnel obstructing them amidships. They could, between them, have delivered an attack about half the size of that urged by Admiral Beatty. "T" machines were formed into squadrons ashore intensively working up in the torpedo attack role. This was no easy task, as to be effective the torpedo had to be released at the right height with no yaw or drift. Aim had to be exact while aircraft flew in tight formation, watching their flight commander and the 'strike co-ordinator' for signals under intense small arms and anti-aircraft fire once the defence became alerted. All this would take skill and tactical awareness of a high order. Ships

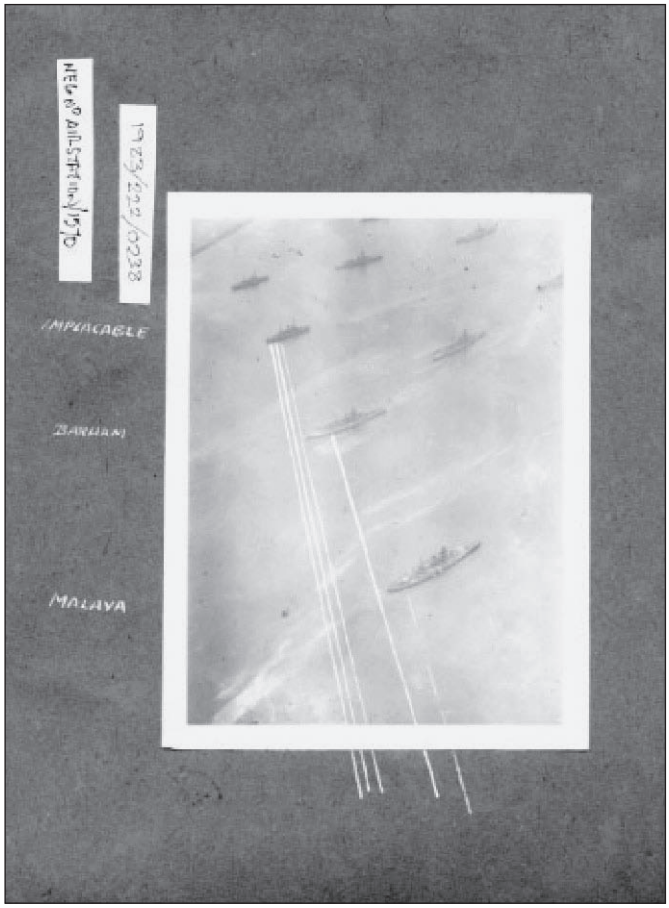
too would need to be proficient and the attack by 2F1 Camels from FURIOUS on airship sheds at Tondern in 1918 showed that they become so even if the aircraft could not land back on board that particular ship.

WHAT MIGHT HAVE BEEN?

Their 1918 Christmas card shows the extent to which the "T" machine pilots saw enemy battleships as targets and 'victims'. The intensity of their training and commitment can be deduced. The Armistice on 11 November 1918 came before the long awaited attack could take place but the idea was born. Subsequently, it was revived by the Royal Navy for potential use on the Italian fleet during the Abyssinian Crisis of 1936 and, of course, for the famous attack on the same fleet in its main base at Taranto in November 1940. Then came Pearl Harbor!

It was obvious to the Royal Navy that it had developed a war-winning weapon and a mock attack using "T" machines was made on the Atlantic Fleet at its moorings in Portland Harbour during 1919. The photographs show the attack taking place and the subsequent analysis of torpedo tracks. Note the use of smoke bombs to cover the attacking aircraft and the early 'air-to-air' shots of aircraft in action.

This was the birth of strike operations "from the sea" that are now taken for granted



The subsequent analysis of torpedo tracks after a mock attack using "T" machines on the Atlantic Fleet at its moorings in Portland Harbour during 1919.

'Everything old is new again'. The last time a torpedo attack by air on shipping was planned was during the 1982 Falklands conflict. Here, an Argentine Pucara has been fitted as a test aircraft to devise a way for this modern turbo prop aircraft to deliver a WW II Mk-13 torpedo against a ship target. The torpedo is fitted to the centreline pylon and the aircraft fitted with cameras to record the tests. The Mk-13 was originally used by the PBY Catalina flying boat which flew a lot slower than the Pucara. Argentina turned to this novel means of anti-ship attack due to the shortage of the anti-ship missile Exocet. Early tests had resulted in the destruction of many of the torpedos due to high speed and angle of entry into the water as the manuals for the use of the torpedo had long disappeared. However, by 10 June 1982 seven successful drops had been made with dummy warheads. Fortunately for the British the war ended just as the Argentine's had perfected the delivery method of the ex-WWII torpedo with a live warhead. The use of this weapon/aircraft combination in San Carlos water would have been as devastating as that envisaged by the British against the Germans in WWI using a propeller driven aircraft.

Flash Traffic

Navy League and Trafalgar, 1805 - 2005

The 21st October this year marks the 200th Anniversary of the Battle of Trafalgar, arguably the most important single battle affecting Australia's future since the first colonists set foot at Sydney Cove in 1788.

Admiral Nelson's HMS VICTORY was preserved and is still a popular tourist attraction. (RN)

The resounding victory of Admiral Lord Nelson over the combined French and Spanish Fleets off southwest Spain ensured that the British Fleet remained supreme on the oceans of the world for over 100 years. During that time various colonies were formed by Britain around our coasts. They were established and developed under the protective cover of the Royal Navy. Eventually they combined to form our democratic nation of Australia – covering the entire continent, and speaking one language.

Had the battle resulted in a severe defeat for the British, the infant colony of NSW would have been one of many tiny colonies world-wide to pass to Napoleon as Britain would have been forced to sue for peace. The world would have developed very differently and one can only conjecture on the future including that of democracy itself.

The Navy League has been endeavouring to stir-up interest in this major historical event and to this end has launched a number of initiatives including:

- An essay competition for the Australian Navy Cadets with a prize of $1,000. The Cadet Unit of the winner will also earn a prize of $1,000 for unit funds.
- The planting of an oak tree in the Parliamentary triangle in Canberra to commemorate the event.
- A major dinner at the Royal Canberra Golf Club on Friday 14 October.
- A combined luncheon with the Australian-Britain Society at NSW Parliament House on 20 October.
- Lectures and press articles.

There will be a number of other functions in Sydney including a display at the National Maritime Museum.

The Nelson Society of Australia is organising a particularly comprehensive round of events in Western Australia including concerts, plays, lectures, dinners and a number of church services.

In Melbourne the Annual Service to Mariners at St Paul's Cathedral has been moved to the Sunday immediately prior to Trafalgar Day. A number of lunches and dinners are being arranged by various bodies including one large dinner at the Crown Casino.

A number of other events are being organised around Australia and the RAN is planning a major commemoration. It has already dispatched HMAS ANZAC to take part in a Fleet Review in Britain in June.

By RADM Andrew Robertson,
Federal Vice-President,
Navy League of Australia.

ASMD capability enhanced for Anzacs

A $260 million contract has been signed with the ANZAC Ship Alliance for the first phase of a major upgrade to the anti-ship missile defences (ASMDs) in Navy's Anzac class frigates.

Defence Minister Robert Hill said the ability to provide warships with protection against anti-ship missile attack was an essential element of Australia's maritime capability.

"The anti-ship missile defence upgrades will ensure the ANZAC frigates have improved defences against modern anti-ship missiles," Senator Hill said. The contract is the first phase of the $500 million Anzac frigates ASMD project announced in December 2003.

The first phase will implement the high priority aspects of the upgrade and will be undertaken in parallel with consideration of the second phase options.

The ASMD upgrade for the Anzac ships is being contracted through Defence's Anzac Ship Alliance with Tenix and Saab Systems. Tenix and Saab will lead and carry out most of the design and systems integration work in their Melbourne and Adelaide facilities.

Under the contract, the Anzac ship Alliance will upgrade the ships' command and control system and install an infra-red search and track system which will provide improved detection and indication of low level aircraft and anti-ship missiles when close to land. The work will also complete the core platform design changes and studies.

The first of the upgraded Anzac frigates will be delivered to Navy in 2008. The remaining ships will then be upgraded over the period 2009 to 2012. All installation work will be carried out by Australian industry in the Navy's East and West coast fleet support facilities during periods of scheduled maintenance.

The Anzac class frigate HMAS STUART. A $260 million contract has been signed with the Anzac Ship Alliance for the first phase of a major upgrade to the anti-ship missile defences (ASMDs) in Navy's Anzac class frigates. (RAN)

AWD moves forward

The Federal Government has chosen ASC Shipbuilder Pty Ltd as the preferred shipbuilder for Navy's Air Warfare Destroyers (AWDs) – one of Australia's largest and most complex Defence projects worth up to $6 billion.

Senator Hill said the Government made the decision after accepting the unanimous recommendation of the Source Selection Board on the basis that ASC Shipbuilders offered a superior bid in terms of value for money.

In addition, the Government has granted first pass approval and provided $455 million towards the next phase of activities including further design work, workforce skilling, initial infrastructure investment and facilities construction.

"More than 1000 direct jobs will be created in South Australia as part of the build contract," Senator Hill said.

"However, up to 70% of the module construction will be sub-contracted to other shipyards around Australia creating around 1000 additional jobs throughout the country.

"This presents an excellent opportunity for the whole of the Australian shipbuilding industry to become involved in the project and also opens up important flow on benefits for key sub-contractors throughout Australia."

ASC Shipbuilder was chosen through a competitive tender evaluation process that also included Northrop Grumman Ship Systems and Tenix Defence.

The conduct of the evaluation and selection of ASC Shipbuilder was reviewed by the Air Warfare Destroyers Program Probity Advisers KPMG and also independently by Sir Laurence Street, both of whom have confirmed that the process was fair and equitable.

"I would like to thank the State Governments of both South Australia and Victoria for providing offers of support to the bidding companies. Both offers were highly competitive and produced excellent infrastructure investment packages," Senator Hill said.

"I also commend Navy, the Defence Materiel Organisation (DMO) and the highly capable project team which included the independent financial adviser Carnegie Wylie and Company and Mr David Mortimer who acted as an Independent Chairman to the Selection Board."

The commitment of $455 million towards the second phase of the project will fund the project until mid 2007 and will further reduce risks to the project in accordance with the recommendations of the Defence Procurement (Kinnaird) Review. In 2007, the Government will consider second pass approval for the project.

Defence is currently evaluating three ship designer proposals from Blohm +Voss, Gibbs &Cox and Navantia (formerly Izar). ASC Shipbuilder is now in a position to assist the Commonwealth to select one of those designers in mid 2005, whose evolved design will be further considered in conjunction with an Australianised version of Spain's existing F100 ship design.

Raytheon Australia has previously been selected as the preferred bidder for Combat System-System Engineer contract in support of the combat system design and maintenance for the Air Warfare Destroyer.

"The AWDs represent a quantum leap in the air warfare capabilities of the Navy," Senator Hill said.

"The vessels, which are to be introduced into service from 2013, will be equipped with the world-class AEGIS Combat System that is capable of detecting and defeating multiple hostile aircraft and missiles at ranges in excess of 150 kilometres.

The AWDs will also have an anti-submarine and anti-surface warfare capability, as well as the ability to embark a helicopter at sea.

They will provide significantly increased protection from air attack for troops being transported and deployed on ADF Operations overseas and can provide long-range air warfare defence for a Naval task group. The ship will also be interoperable with the United States and other Coalition partners.

Senator Hill said the construction of the vessels will be a major project for Defence Industry. Accordingly, companies bidding for the AWDs were required to include Australian skills and training programs in their tenders, in line with the Government's Skilling Australia's Defence Industry program.

CANTERBURY decommissions

Flying a 122 metre long decommissioning pennant, HMNZS CANTERBURY entered Auckland Harbour on Thursday 24 March, fired a gun salute at 09:42 am for the last time as a commissioned Naval vessel, before berthing at Devonport Naval Base at 10:00am. The Auckland Harbour provided many vantage points for the Kiwi public to witness the final entry by HMNZS CANTERBURY.

The decommissioning pennant represents the length of service of the ship – the last steam driven Leander Class Frigate in the Royal New Zealand Navy has completed 33 years of operational service.

Under the command of Commander Peter Kempster, the crew of 247 Officers and ratings have recently taken HMNZS CANTERBURY on a Farewell Tour of her home port areas of Timaru, Akaroa and Lyttelton/ Christchurch.

HMNZS CANTERBURY was decommissioned on 31 March 2005.

HMNZS CANTERBURY was launched by Her Royal Highness Princess Anne (the Princess Royal) on 6 May 1970 and was commissioned into the Royal New Zealand Navy on 22 October 1971.

HMNZS CANTERBURY is the last of the Leander-class frigates commissioned into service in the Royal New Zealand Navy and her decommissioning in 2005 marked the end of the steam turbine era.

Particulars of HMNZS CANTERBURY:
Length: 113.4 m
Draught: 5.6 m
Displacement: 3,182 tonnes
Machinery: Two steam turbines driving twin shafts
Speed: 30 knots
Complement: 240 (Officers and Ratings)

Surviving sail from Trafalgar on display

The only surviving sail from the Battle of Trafalgar is to go on show to the public as part of the celebrations for this year's bicentenary. A special exhibition displaying the historic fore topsail from Nelson's flagship, HMS VICTORY, can be viewed in Portsmouth Historic Dockyard, UK, from March 18 to October 30 after an official opening by the Duke of Edinburgh.

Aside from HMS VICTORY herself,

experts and historians worldwide recognise the foretopsail as the largest single original artefact from the Battle of Trafalgar. Covering an area of 3,618 ft, it was the second largest sail on board HMS VICTORY and would have been one of the main targets for French and Spanish guns as HMS VICTORY approached the enemy line. It is battle-scarred and pockmarked by some 90 shot holes, although 19th century souvenir hunters cut out a few squares. It also has huge historical importance as a hand-manufactured object from the time. Measuring 80ft at its base, 54ft at its head and 54ft deep and weighing an estimated 370kg, it would have taken around 1,200 man-hours for experienced sail makers to stitch.

The sail was manufactured in the sail loft at Chatham in 1803. It remained on HMS VICTORY until the ship returned for repairs after the Battle of Trafalgar in 1806, then was taken to the sail loft in Chatham. For the next 85 years, the history of the sail is somewhat obscure. It was displayed at an exhibition in 1891 and then onboard HMS VICTORY for the centenary of Trafalgar in 1905. It was later discovered in a sail loft at Victory barracks, now HMS NELSON, in 1960, covered by gym mats. It was returned to the ship for display in a glass cabinet on the Orlop in 1962, then left the ship for good in 1993, when it was found that the sail was deteriorating rapidly and needed urgent conservation work.

Now housed in environmentally controlled conditions in Storehouse 10, within the Historic Dockyard, the sail has undergone an enormous amount of work, which has ensured its long-term survival. The sail was initially mapped and photographed and initial conservation was carried out at the Carpet Conservation Workshop in Salisbury before it was displayed to the public at the International Festival of the Sea in 1998. Following the success of the trial display, Mary Rose Archeological Services Ltd, led by Dr Mark Jones, were contracted to carry out research into the condition of the sail and to recommend a cleaning process. The once heavily soiled sail has since undergone unique and extensive 'dry' cleaning carried out by the Winchester-based Textile Conservation Centre, part of Southampton University.

Keel laid for HMS ARTFUL

RN First Sea Lord Admiral Sir Alan West has performed the traditional 'laying the keel' ceremony for HMS ARTFUL – one of the biggest and most powerful attack submarines ever procured by the Royal Navy.

The ceremony marked the formal start of construction of HMS ARTFUL – the third Astute-class submarine under construction by BAE Systems at Barrow-in-Furness. She joins HMS ASTUTE and HMS AMBUSH, currently being assembled at the Barrow shipyard.

With improved communications, a greater capacity for joint operations and the ability to carry more weaponry, the Astute-class submarines will become a cornerstone of UK defence capability.

Defence Procurement Minister Lord Bach said: "This ceremony marks another significant stage in this important project. The Astute class will be the most advanced and powerful attack submarines the Royal Navy has ever operated and these boats will play a key part of our defences for decades to come."

The Royal Navy has a requirement for nuclear powered submarines well into the future and the Barrow-in-Furness yard remains the UK's centre of excellence for submarine building. Announcements on the procurement of further Astute-class boats will be made at the appropriate time.

Around 5,500 people are employed on the project for the first three Astute-class submarines, which has an expected cost to MoD of about £3.5Bn.

Indian team monitors ADMIRAL GORSHKOV refit

A 13-member Indian naval team led by Vice Admiral Pravesh Jaitly is in Russia to monitor the upgrade of aircraft carrier ADMIRAL GORSHKOV acquired by India under a deal signed in January 2004.

The Indian team has already visited SevMash Naval Shipyard in Severodvinsk in Russia's Arkhangelsk region, where the aircraft carrier is being modernised after its formal handover to the Indian Navy last year.

The Indian inspection team has visited workshops of SevMash and inspected the layout of the ADMIRAL GORSHKOV's accommodation areas for the crew.

The Indian team is currently in St. Petersburg where it would visit the Nevskoye Design Bureau involved in the GORSHKOV upgrade project.

In approximately two years from now the aircraft carrier will be modernised and equipped with 12 single seater MiG-29K fighters and four MiG-29 KUB combat trainers.

The total bill of the Gorshkov acquisition could reach the USD$1.5 billion mark.

China and Russia to rehearse invasion of Taiwan

Chief of the Russian General Staff Yury Baluyevsky has visited China to settle a scandal over the first Russian-Chinese military exercise, Commonwealth-2005, which is due to be held this Spring off the Yellow Sea coast.

The initial plans were to practice operational teamwork in combating terrorism during the exercise. However, Beijing, changed the format of the exercise and has tried to re-orient the two countries' armies to practicing an invasion of Taiwan.

The choice of where the exercise will take place became a stumbling block. The Russian military selected the Xinjiang-Uigur autonomous region, basing their choice on the area's problematic nature due to Uigur separatists and its proximity to Central Asia, which has become an arena in the fight against international terrorism. However, Beijing flatly rejected the proposal. Instead, it suggested the Zhejiang province near Taiwan.

A joint exercise in this area might look too provocative and trigger a strong reaction not only from Taiwan but also America and Japan, which recently included the island in the zone of their common strategic interests.

Beijing is trying to use Russia as an additional lever of pressure on the disobedient island to show it that its policy is also causing dissatisfaction in Russia, from which the Taiwanese are expecting assistance in their dialogue with Beijing and bid to join the WTO and the UN.

Negotiations between the two countries continue.

DE ZEVEN PROVINCIËN tests missiles

On March 10 a number of successful firings of the Evolved Sea Sparrow (ESSM) and Standard 2 (SM-2) missiles took place aboard HNLMS DE ZEVEN PROVINCIËN in the Atlantic Ocean (west of Madeira).

The launchings, involving three ESSMs and three SM-2s, were assisted by HNLMS WILLEM VAN DER ZAAN and two Portuguese maritime patrol aircraft. For test firing purposes, drones were launched from the stern and controlled from WILLEM VAN DER ZAAN. The drones simulated flight patterns and characteristics of the targets against which both types of missiles can be used. The ESSM is used against low flying targets; the SM-2 is used against high flying, long-range targets.

The first firing scenario called for the missiles being fired at a target, but with the warheads deactivated and targeted at close range. In another scenario, in which two missiles of each type were launched, the warheads were activated. Within a minute they left their cells, and the APAR (Active Phased Array Radar) directed them to their targets, which were subsequently destroyed.

In February, HNLMS DE ZEVEN PROVINCIËN conducted her so-called SEWACO trials, in which all Sensor, Weapons and Command systems were tested. Once these have been completed, the ship can be formally transferred to the Royal Netherlands Navy.

The ESSM is a development of the NATO Sea Sparrow Consortium, consisting of ten NATO member states and Australia; SM-2 was originally developed for the US Navy and sold to allied navies. Further developments regarding the Standard Missile by the US, the Netherlands and Germany, have been laid down in two Memorandums of Understanding in November 2004.

During the launchings, the missiles and the Trilateral Frigate Co-operation (TFC) Anti-Air Warfare (AAW) system demonstrated the expected operational and tactical capacities against short range and long-range threats. The TFC AAW-system includes the multifunctional APAR. APAR controls target acquisition, tracking of target movements and controlling multiple weapons systems simultaneously. It differs from other radar systems in that it has no rotating elements and uses a Interrupted Continuous Wave Illumination (ICWI). This means that, while in flight, the missiles receive brief pulses from the APAR, providing information on the target's position. When the missile approaches the target, APAR illuminates it, enabling the missile to 'see' and intercept it. Traditional radars continuously illuminate. APAR also enables the ship to detect multiple targets and direct multiple missiles to them.

The launchings were conducted within the framework of TFC AAW's test and evaluation activities, which also featured risk reduction launchings in November 2003, also from HNLMS DE ZEVEN PROVINCIËN. During the

HNLMS DE ZEVEN PROVINCIËN firing an ESSM during trials in the Atlantic. (RNLN)

November 2003 launchings, it was determined if the complex weapons system worked properly from detection onto actual use. It has now been tested in a realistic scenario.

The Trilateral Frigate Co-operation is a program jointly developed by the Netherlands (DE ZEVEN PROVINCIËN class Air Defence and Command Frigates), Germany (Sachsen class F-124 frigates) and Spain (F-100 class frigates) in the early 1990s. The countries investigated the feasibility of jointly developing and purchasing systems, in an effort to reduce costs. This eventually led to the development and purchase of, amongst others, the APAR and Smart-L radar systems and the TFC AAW system. Spain withdrew from the latter project in 1995 and selected the US Navy's Aegis system. Canada joined late in 1995 for the development of the APAR system.

SM-2 & ACS demonstrate capability

SM-2s, launched from the USS MOMSEN (DDG-92) the week of March 7, went seven for seven against a variety of targets. This testing utilised the new Aegis Weapon System Baseline 7 Phase 1 and also involved successful ESSM (Evolved Sea Sparrow Missile) firings.

The SM-2s – in Block III, IIIA and IIIB variants – were fired against subsonic and supersonic targets in various configurations and in a littoral environment. The testing also included a dual engagement against two targets – two SM-2s were launched nearly simultaneously against two targets and achieved two kills.

"These tests are validation of the successful partnership between Raytheon and the US Navy to ensure the continued delivery of a high quality, fully capable weapon system to the warfighter," said Duane Hawkins, Raytheon Standard Missile program director.

"With more than 50 years of leadership in the anti-air warfare arena, these recent successes validate that the Standard Missile family of weapons continues to be the world's most capable deployed fleet defence missile," said Capt. Mick Outten, the US Navy's program manager, Surface Ship Weapons and Launchers.

Dismantling Russian nuclear submarines

Developing a road map for dismantling old nuclear attack and cruise missile submarines belonging to Russia's Pacific fleet was the aim of a NATO-sponsored Advanced Research Workshop held in Vladivostok, from 17 to 18 March. The workshop is part of NATO's Security through Science Program.

Efforts to complete the dismantling of Russian nuclear submarines have emerged as an issue of broader international interest. The G8 Global Partnership against the Spread of Weapons of Mass Destruction, agreed in June 2002 to spending $20 billion over 10 years to secure and destroy nuclear, chemical and biological weapons and material in the former Soviet Union.

This includes the nuclear material associated with Russia's fleet of decommissioned nuclear submarines. While progress has been made in decommissioning and dismantling surplus nuclear submarines from the Russian Navy, most progress has been on the fleet of strategic submarines, which are capable of carrying intercontinental ballistic missiles.

Work still remains to be done with regard to general-purpose submarines, i.e. attack and cruise missile submarines. As of May 2003, Russia had 87 decommissioned nuclear submarines stored afloat with nuclear fuel onboard. Of these, 77 are general-purpose submarines, which are no longer seaworthy and continue to degrade thereby increasing the threat of the release of potentially highly radioactive material into the environment.

Additionally, the spent nuclear fuel represents a significant proliferation hazard and a potential tool for terrorist acts using radiological agents. In addition, most of the previous US and European efforts have focused on the Northern fleet, in Murmansk, near Norway, while plans for the dismantling of the Pacific Fleet are much less developed.

The 38 participants to the workshop discussed the scientific, engineering and organisational problems that remain unresolved in dismantling nuclear submarines of the Pacific fleet and considered methods for better coordinating the Pacific Fleet and Northern Fleet's dismantling efforts. Before the workshop, the planning committee visited the Petropavlovsk and Vladivostok submarine facilities in order to share their findings during the workshop's discussions, which drew on expertise from Russia and other New Independent States, Western Europe, Japan and the US.

HMCS HURON decommissions

Current and former shipmates of Her Majesty's Canadian Ship HURON mustered one last time to say farewell to their ship recently. After 32 years of service to Canada, the ship was

USS JOHN F. KENNEDY closest to camera with USS THEODORE ROOSEVELT in the background. USS KITTY HAWK may be replaced by USS JOHN F. KENNEDY as the USN's forward deployed aircraft carrier in Japan due to host country concerns over nuclear powered ships. (USN)

officially paid off in the presence of the Honourable Iona Campagnolo, Lieutenant Governor of British Columbia, and Commodore Roger Girouard, Commander Canadian Fleet Pacific.

Built by Marine Industries of Sorel, Quebec, HMCS HURON was commissioned on December 16, 1972 as one of four Iroquois-class destroyers. Originally designed and built as an anti-submarine warfare ship with point air defence capability, a major refit program that began in 1987 transformed the Iroquois-class destroyers into Task Group Command and Air Defence ships. HURON underwent the Tribal Class Update and Modernisation Program between 1992 and 1994. Other ships of the class are HMC ships IROQUOIS and ATHABASKAN, both assigned to the Atlantic Fleet, and HMCS ALGONQUIN, the flagship for the Pacific Fleet.

Since joining the Canadian Pacific Fleet in 1987, HURON was among the first Canadian ships to visit Vladivostok, Russia in 1990. At the end of the Gulf War in 1991 she was the first Canadian ship to enter Kuwait having been deployed to succeed the three Canadian ships that led the Multinational Logistics Force in support of the War. HURON was a major participant in support of Canada's operation to stop illegal boat migrants from coming to Canada in 1999. Later, a decision was made to place the ship on extended readiness status because personnel shortages made it impossible for the ship to be properly crewed. HURON last sailed on October 23, 2000, and a small custodial crew has since maintained it.

USS SPRUANCE. After nearly 30 years of service SPRUANCE has been decommissioned during a ceremony at Naval Station Mayport on March 23. The only remaining Spruance class destroyers of this once 31-member class are CUSHING and O'BANNON. (USN)

JFK to replace KITTY HAWK?

The US Navy is poised to replace the aircraft carrier USS KITTY HAWK, forward deployed to Yokosuka, Kanagawa, Japan, with another conventionally powered carrier – the USS JOHN F. KENNEDY.

With the KITTY HAWK slated to be retired in 2008, its replacement has been a point of contention between Washington and Tokyo due to strong opposition to letting nuclear-powered vessels dock in Japan.

But the US Navy has apparently reversed its plan to deploy a nuclear-powered carrier and determined that it can improve its operational capacity with a conventional carrier by temporarily decommissioning it and upgrading it.

But since deploying a carrier group is one of the key foundations of US military policy, the decision still needs to be vetted by the administration, mainly the US Defense Department and the US State Department.

"The JFK can be made available," the official said, adding that the 81,430-ton carrier will be upgraded and returned to active duty if Congress approves the move.

The JFK was commissioned in 1968 and would remain active until around 2018 if recommissioned in 2008, the navy said.

The official also added that deployment would require an agreement between Washington and Tokyo.

In Tokyo, Senior Vice Foreign Minister Ichiro Aisawa said the US has not informed Japan about candidates to replace the KITTY HAWK.

Commissioned in 1961, the 83,960-ton KITTY HAWK is America's oldest active carrier.

USS SPRUANCE decommissions

After nearly 30 years of service to the USN, USS SPRUANCE (DD-963) has been decommissioned during a ceremony at Naval Station Mayport on March 23.

Assigned to Destroyer Squadron 24, SPRUANCE was the lead ship of the 31 Spruance-class destroyers. She was built by Ingalls Shipbuilding in Pascagoula, Miss., and commissioned September 20, 1975.

Adm. Vern Clark, Chief of Naval Operations, was the guest speaker.

A Chinese F-22P (Jiangwei-II) frigate during fit out. Pakistan has signed a contract for four such ships with technology transfer agreements included in the deal.

The ship was named after Adm. Raymond A. Spruance, who had a long and distinguished naval career that culminated in his appointment as Commander in Chief, Pacific Fleet and Pacific Ocean Areas in 1945. Adm. Spruance later became President of the Naval War College, and held that post until his retirement July 1, 1948.

Called to the colours once again in 1952, Adm. Spruance served as U.S. Ambassador to the Republic of the Philippines until the spring of 1955. He then returned to his home at Pebble Beach, California, where he lived until his death December 13, 1969.

For nearly three decades, USS SPRUANCE played a major role in operations in the Atlantic Ocean, Caribbean and Mediterranean Seas, the Persian Gulf and European waters. Operation Restore Democracy in Haiti, Operation Desert Storm, Operation Enduring Freedom and Operation Iraqi Freedom are among the many actions in which SPRUANCE participated. Only CUSHING and O'BANNON are still in service of this once 31-member class of destroyer.

An RN Sea King helicopter about to land on the deck of HMS ILLUSTRIOUS. The UK Ministry of Defence has awarded a £300 million contract to Westland Helicopters Ltd to secure the long-term future support provided to Sea King aircraft. (RN)

Pakistani Jiangwei-II contract signed

Pakistan recently signed a contract for the purchase of four frigates from long-time ally China.

Senior Defence officials of both the countries signed four contracts for state-of-the-art F-22P (Jiangwei-II) frigates with all related equipment/systems under a Transfer of Technology agreement.

The signing of the frigate deal will help strengthen Pakistani naval defence. Pakistan has for a long time been seeking to introduce new warships in its naval fleet in order to keep up with the Indian Navy. The F-22P frigates will be equipped with helicopters, especially designed for anti-submarine warfare, and surface-to-surface and surface-to-air missiles along with other self-defence

systems.

Some of the ships will be constructed in Pakistan. Following the American decision to sell 24 multi-role F-16 jets to Pakistan, the Sino-Pakistan frigates deal is the second biggest defence deal Pakistan has clinched in recent times.

UK Sea King contract awarded to Westland

The UK Ministry of Defence has awarded a £300 million contract to Westland Helicopters Ltd to secure the long-term future support provided to Sea King aircraft.

The Sea King Integrated Operational Support (SKIOS) contract, awarded by the UK's MoD's Defence Logistics Organisation (DLO), replaces around 60 individual contracts with over 30 different suppliers, saving the MoD £50 million over the next ten years.

Under the contract, Westland Helicopters will assume responsibility for the provision of aircraft, transmission, mechanical and avionics support for the Sea King covering spares, repairs, publications and technical advice. The technical support service will include a customer support service and the provision of on-site support teams at each Sea King main operating base.

Sea King helicopters are one of the real workhorse aircraft of the UK's Armed Forces used for a variety of tasks often in harsh and difficult environments.

Taiwan to mass produce ASMs

Taiwan plans to mass-produce supersonic anti-ship missiles to beef up the island's defence capabilities against China following successful test firings of the weapon, a report said recently.

The Taiwanese Defence Ministry will set aside a budget for mass production of the Hsiung Feng III missile, which is expected to make its debut during the 2006 'Han Kuang 22' exercise, the Chinese-language *China Times* said.

Given its speed and capability of flying at low altitude, the missile would be difficult to intercept, it said.

The Hsiung Feng III will be capable of cruising at mach 2.5 and will have a range of up to 150 kilometres, it said:

Once the Taiwanese Navy was equipped with the weapon, the island would be one of the few countries in the world to be armed with supersonic anti-ship missiles, the paper said.

The missile, developed by the military-run Chungshan Institute of Science and Technology, is expected to be a match for the Russia-made SS-N-22 Sunburn supersonic anti-ship missile China has obtained, it said:

According to a report in Jane's Defence Weekly last year, the Hsiung Feng III can be fitted with a variety of guidance systems and function as an anti-ship, land-attack or anti-radar missile.

Taiwan is striving to build up its missile defence capabilities to counter the military threat from China, which officials said was targeting the island with at least 700 ballistic missiles.

Three months ago Taiwan's Cabinet approved a revised arms deal with the United States worth almost US$15.5 billion after the previous proposal was rejected by parliament.

The arms package includes eight conventional submarines, a modified version of the Patriot anti-missile system and a fleet of anti-submarine aircraft.

TEXAS launched

Northrop Grumman Corporation reached a construction milestone on April 9 by launching the second Virginia-class submarine, TEXAS (SSN-775). This was the company's first submarine launching in nearly a decade.

Northrop Grumman's Newport News sector is teamed with General Dynamics Electric Boat to build the first 10 ships of the Virginia-class. Current plans call for 30 Virginia-class submarines in the US fleet. The first ship of the class, the USS VIRGINIA (SSN-774) was delivered on October 12, 2004. VIRGINIA is the first major combatant delivered to the US Navy that was designed with the post-Cold War security environment in mind.

Becky Stewart, vice president of submarine programs for Northrop Grumman Newport News, was among 150 employees and 40 sailors who participated in the launch. "Watching TEXAS take her first journey into the water was an exciting event for all of the people who have been involved in constructing the ship," Stewart said. "It's a milestone that the entire team, shipbuilders and crew members, have been working hard to achieve. This crucial accomplishment is a testament to the great talent, skill and dedication of our employees and the TEXAS crew."

TEXAS is the second ship of the Virginia-class. With improved stealth, sophisticated surveillance capabilities and special warfare enhancements, it will provide undersea supremacy well into the 21st century.

The keel for TEXAS was laid on July 12, 2002 and the ship was

TEXAS taking her first journey into the water. (Northrop Grumman)

christened on July 31, 2004. First Lady Laura Bush is the ship's sponsor and attended both ceremonies. The ship is scheduled to be delivered in 2006.

Portuguese Navy orders submarines

The Siemens Industrial Solutions and Services Group (I&S) is fitting two new U-209mod submarines for Portugal's Navy with the latest AIP (Air Independent Propulsion) system. The order is worth 58 million EURO with handover of the submarines to the Portuguese navy scheduled for 2010. The contract also includes an option for the same equipment to be built into a third submarine. This option is worth around 23 million EURO.

The submarines will be built at the Howaldtswerke Deutsche Werft GmbH (HDW) and at Nordseewerke in Emden, Germany. Both shipyards belong to ThyssenKrupp Marine Systems. Siemens' scope of supply includes provision of a Permasyn permanent-magnet electric motor with PEM (Polymer Electrolyte Membrane) fuel cells for supplying power, switchgear and the Nautos automation system. The electric propulsion units with permanent-magnet synchronous motors for supplying direct current are characterised by extremely low signatures, high availability, compact design and ease of operator control. A PEM fuel cell system supplies the energy, thus enabling AIP when the submarines are submerged. The AIP system comes from HDW, while Siemens is providing the fuel cell modules as well as the control and monitoring devices. The 'Nautos' integrated automation system controls, monitors and coordinates all the engineering systems.

Operator control and visualisation are carried out from the engineering control console. This relieves the operator of all the routine tasks, facilitates operation of the submarines and increases their reliability and safety. The scope of supply also includes submarine-specific switchgear, electronic documentation, a pier monitoring system and a shore test facility. The equipment being supplied by Siemens is the latest technology for non-nuclear submarines.

After orders received from Germany, Italy, Greece and Korea in preceding years, Siemens has now been contracted to equip a total of 15 conventional submarines with this innovative technology.

Fourth KDX-II delivered

The ROK Navy launched another KDX-II class destroyer during May. The 4,200 ton destroyer, the fourth KDX-II class destroyer after the CHUNGMUGONG YI SOON-SHIN, MUNMUDAEWANG and DAEJOYEONG, takes its name from the founder of the ancient Korean kingdom of Goryeo. It is 150 metres long with a beam of 17 metres and height of 9.5 metres and has a top speed of 30 knots.

The WANG-GEON is equiped with Harpoon anti-ship missiles with a range of 130 km and Standard SM-2 anti-air missiles capable of accurately intercepting aircraft and cruise missiles 100 km away. It also features the 30mm Thales Nederland Goalkeeper close-in weapon system (CIWS) and can carry two Super Lynx anti-submarine helicopters. The ship's hull incorporates stealth technology to make detection by radar more difficult.

Latest Kilo for China completed

A Russian shipyard has completed a new submarine for the Chinese Navy, Interfax news agency reported during May.

The Admiralteiskiye Verfi state-owned shipyard in St. Petersburg handed over the second submarine built for the Chinese Navy on May 5, a company source told Interfax.

The first sub was launched in June 2004. The third submarine in the order has also been completed and is currently being tested at the factory. The fourth vessel will be launched in May 2006, and the fifth in June or July 2006, the news agency said.

Russia is currently building eight submarines for China at a total cost of US$1.6 billion.

SA's second submarine launched

The South African National Defence Force (SANDF) has launched the country's second of three Type 209 submarines, the S102, in Emden, Northern Germany.

Another submarine, S101 was launched in Kiel, Germany, a year ago.

S102 is still under construction but the project is expected to be completed by 2006/7.

The submarine forms part of government's R43 billion arms procurement deal.

Deputy Defence Minister George Mluleki said the naming and launching of any vessel was a significant occasion, as it would only happen once in the lifetime of the vessel although it could commission and re-commission a number of times during its lifespan.

Meanwhile, the keel of the third boat, S103 has been laid down and due to be launched in 2006.

Mr Mluleki added that all the submarines would be making their delivery voyages under their own power with SA Navy personnel on board escorted by one of SA Navy's surface vessels.

"The exercise will give our navy an opportunity to test the submarine on a long deployment and it will further give us the opportunity to test our ability to support the submarine during such a voyage," he said.

A group of submariners is undergoing training in Germany and another 20 submarine combat and engineering officers are being trained in India.

They are being taught how to operate the submarines and are also learning more about the technical aspects, which include electrical and mechanical maintenance.

Mr Mluleki said that by the time S103 was ready; she would have a complete South African trained crew on board when she sailed for home.

Spartan USV successful live-fire tests

The US Navy has successfully conducted live-fire testing of a new unmanned surface craft designed for use in the Global War on Terrorism. The Spartan Scout remote controlled unmanned surface vehicle (USV)

conducted the first ever live-fire test of a USV at Aberdeen Proving Grounds, Md. in early April.

"We're excited about the potential capability demonstrated during this testing as a stepping stone to the planned Littoral Combat Ship (LCS) surface warfare capability," said Capt. Walt Wright, LCS Mission Module Program Manager and Transition Manager for the Spartan ACTD.

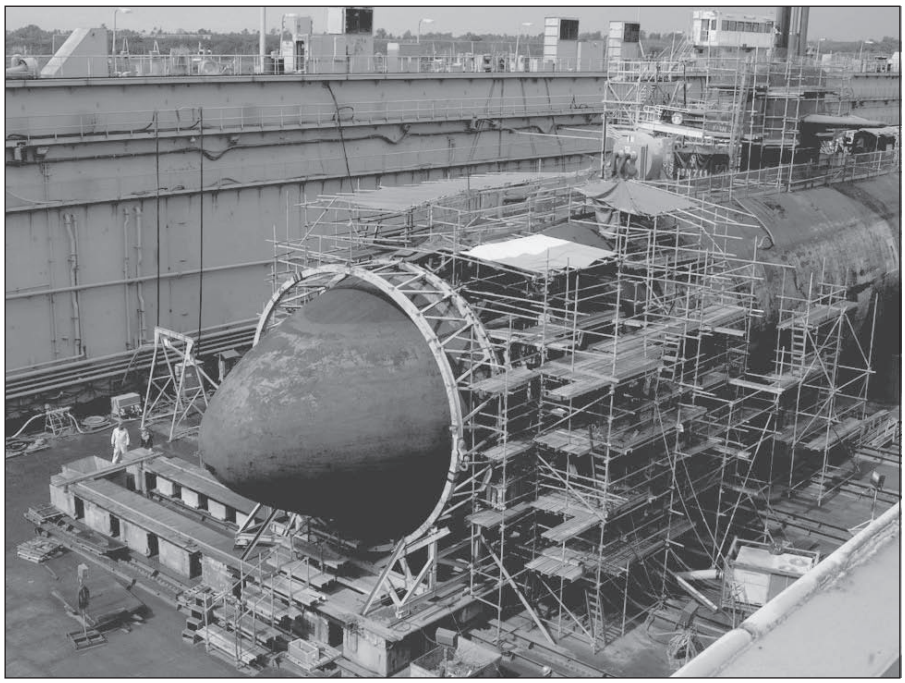
The Spartan Scout is an unmanned integrated sensor and weapons system placed on a seven-metre rigid hull inflatable boat (RHIB) that can be used against asymmetric threats such as small boats and mines. During the recent tests at Aberdeen, Spartan successfully fired a remotely controlled, high fidelity electro-optically sighted .50 calibre machine gun while moving across the open water.

Spartan is a low-cost means of extending maritime patrol areas and providing anti-terrorism force protection (AT/FP) for ships and other fleet assets. Spartan is one of the potential weapons systems for the Navy's new LCS class ship that will use interchangeable mission modules to perform various tasks.

In addition to the Spartan Scout AT/FP version recently tested, other

SAN ANTONIO, first ship of the LPD-17 class at sea during builder's trials. (Northrop Grumman)

variants are planned for the future mission modules to be deployed from the LCS. Current plans call for integrating the US Army's Non-Line of Sight Launching System (NLOS-LS, formerly Netfires) missile and a lightweight 30mm gun into an 11-metre RHIB as a module in the surface warfare mission package. Spartan also provides the foundation for RHIB-based minesweeping and sonar systems in the planned mine warfare and antisubmarine warfare mission packages.



USS SAN FRANCISCO in dry-dock in Apra Harbor, Guam, under repair. The transformation from her original entry into the dry-dock is amazing when compared to the damage suffered (see *THE NAVY* Vol 63 No 2, p 17.) (USN)

The Spartan has already been used in support of naval forces in the Middle East. A prototype Spartan Scout was successfully launched and remotely operated in the Persian Gulf by the combat direction centre (CDC) on the USS GETTYSBURG in December 2003. This prototype was used for harbour surveillance and maritime chokepoint reconnaissance of the region's straits.

The Spartan is an advance concept technology demonstration (ACTD) program designed to address joint warfighting needs in the world's increasingly complex and contested littoral areas. Office of the US Secretary of Defense (OSD) sponsored ACTD programs allow rapid development of new technology for use by US Armed Forces.

LPD-17 completes builder's trials

SAN ANTONIO, first ship of the LPD-17 Class, returned to Northrop Grumman Ship Systems (NGSS) Pascagoula facility after successfully demonstrating performance during Builder's sea trials. Having accomplished significant pier-side systems testing and dock trials, this underway testing was a critical milestone on the path to ship delivery.

NGSS conducted a complete range of tests including ship manoeuvring and steering, propulsion and propulsion controls, mission systems, auxiliary systems, and combat systems. The Shipboard Wide Area Network and Engineering Control System, which comprise the cornerstone of this highly complex new amphibious ship, were also demonstrated.

The future USS SAN ANTONIO will be commissioned in Ingleside, Texas, this spring. The next three ships of the class, NEW ORLEANS, MESA VERDE and GREEN BAY are all scheduled to undergo builder's trials in 2006. The future USS NEW YORK, the fifth ship of the class, continues construction at the NGSS facility in Avondale, LA.

USS SAN FRANCISCO investigation finished

The USN announced on May 9 the completion of the investigation into the January 8 accident aboard the submarine USS SAN FRANCISCO (SSN-711) that claimed the life of one Sailor.

SAN FRANCISCO struck an undersea mountain about 360 miles southeast of its Guam homeport because its leaders and watch teams failed to develop and execute a safe voyage plan, the command investigation into the incident concluded.

"The findings of fact show that SAN FRANCISCO, while transiting at flank (maximum) speed and submerged to 525 feet, hit a seamount that did not appear on the chart being used for navigation," the 124-page report said of the incident in the vicinity of the Caroline Islands.

"Other charts in SAN FRANCISCO's possession did, however, clearly display a navigation hazard in the vicinity of the grounding," it said. "SAN FRANCISCO's navigation team failed to review those charts adequately and transfer pertinent data to the chart being used for navigation, as relevant directives and the ship's own procedures required.

If SAN FRANCISCO's leaders and watch teams had complied with requisite procedures and exercised prudent navigation practices, the grounding would most likely have been avoided. Even if not wholly avoided however, the grounding would not have been as severe and loss of life may have been prevented."

Machinist's Mate 2nd Class Joseph Allen Ashley, 24, of Akron, Ohio, died aboard the submarine January 9 from an "inevitably fatal" severe head injury sustained during the accident.

"Earlier evacuation or arrival of medical officers would not have changed the outcome for Ashley" the investigation said in regard to the two additional medical personnel flown aboard by helicopter and two attempts to medically evacuate him by helicopter.

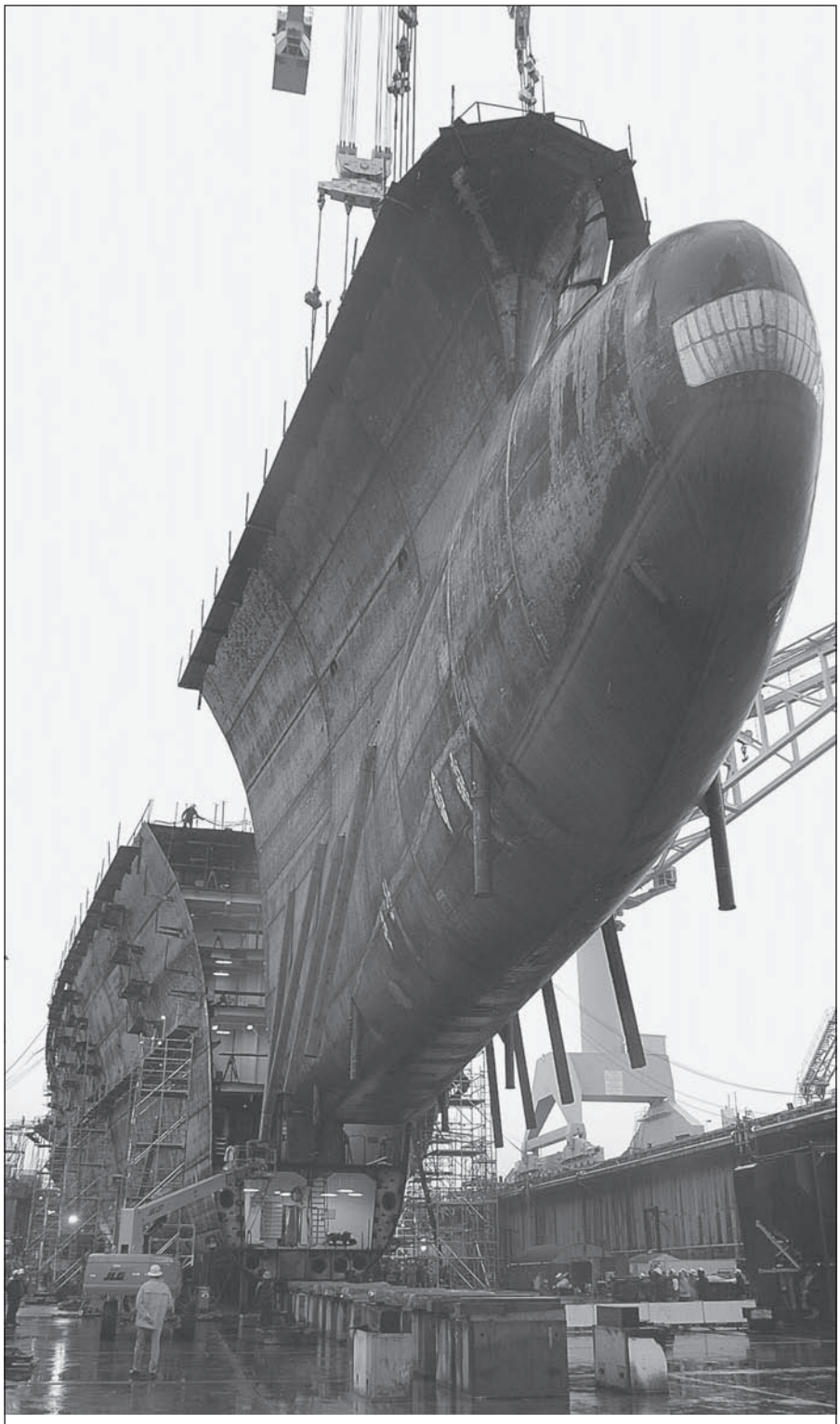
Another 97 of 137 crew members reported injuries ranging from minor bruising and muscle strains to two who suffered dislocated shoulders. Sixty-eight of them were evaluated and treated aboard, while the remaining 29 were treated at Naval Hospital Guam when SAN FRANCISCO returned to port under its own power January 10. Just three of them were admitted overnight for further evaluation and treatment.

As a result of the collision, U.S. 7th Fleet Commander Vice Adm. Jonathan W. Greenert relieved Cmdr. Kevin Mooney of his command of SAN FRANCISCO February 12 following non-judicial punishment proceedings in Yokosuka, Japan. Mooney also received a letter of reprimand.

But Greenert, in his endorsement of the investigation, also praised Mooney's prior record and performance following the impact.

"Although the grounding incident compelled me to punish [him] and remove him from command, in my opinion it does not negate 19 years of exemplary service," the admiral wrote. "Prior to the grounding incident, USS SAN FRANCISCO demonstrated a trend of continuing improvement and compiled an impressive record of achievement under [Mooney's] leadership. Moreover, the crew's post-grounding response under his direct leadership was commendable and enabled [the sub's] recovery and safe return to port."

Greenert also criticized the executive officer and navigation team for their share of the responsibility, saying their "failure to adequately and critically



The massive bow section of the still building US aircraft carrier, GEORGE H. BUSH, being lowered into position on the slipway. (USN)

Observations

By Geoff Evans

THE BUDGET AND DEFENCE

The Federal Treasurer's address to Parliament on 10 May was unusual in that no mention was made of the defence force, in bygone age one of the major items of Commonwealth expenditure; The Opposition Leader in his address in reply also ignored the subject. The Treasurer did however, refer to increased spending on intelligence, border protection and measures related to possible terrorist activities, a matter of course from which Defence is not divorced.

Following a lengthy period of diminishing defence expenditure, both as a percentage of Commonwealth outlays and in, real terms, in the last few years of the 20th century* Defence has faired much better in the annual allocation of funds and in the current year is expected to receive some $15.6 billion, a substantial increase on the recent past even when increased material and other costs are taken into account. Even so, if published figures are to be believed, the defence vote is a little over 6% of Commonwealth outlays, similar to that devoted to education and considerably less than the nearly 38% to be spent on social security and welfare.

Given that Australia's prosperity is dependent on a variety of circumstances over which the government has little or no control – overseas events, climatic changes etc – if the writer has any concern it relates to the looming cost of projected new defence equipment, not least destroyers and aircraft (reported to be in the vicinity of $6 billion and $16 billion respectively – why these two so-called "big ticket" items were allowed to fall due at about the same time is, to say the least, regrettable) together with the cost of existing and possible future overseas involvements.

Maybe "Future funds" will have some unexpected demands made upon them!

NEW NAVY CHIEF

Among the changes to take place in the senior ranks of the ADF in July is that of Chief of Navy. After completing three years as Chief, Vice Admiral Chris Ritchie will retire from the RAN and will be replaced by Vice Admiral Russ Shalders who has been serving as Vice Chief of the Defence Force (VCDF) under General Peter Cosgrove who will also retire and be replaced by Air Marshal Angus Houston. The only Service Chief to remain in place is Lieutenant General Peter Leahy, the Army's Chief.

The careers of the admirals were outlined in the October-December 2002 issue of *THE NAVY*. Both officers have had significant naval and defence appointments as senior RAN officers and one might expect the Navy to continue to be well-led during VADM Shalders' tenure of office: He has the added advantage of being the first Director General of Coastwatch with the responsibility of bringing together the several governments and organisations engaged in supervising and policing a host of maritime activities ranging from customs and immigration to health and the environment; apart from organising ability the task required infinite patience and tact, virtues fortunately possessed by the inaugural Director General.

After two years with Coastwatch VADM Shalders went to Defence Headquarters as Head of the Personnel Executive, thence as VCDF: In his appointment he achieved another first by becoming, in March 2004, the inaugural Commander of a newly-formed Joint Operations Command which replaces HQ Australian Theatre.

A thoughtful man who discharges his responsibilities quietly and without fuss, VADM Russ Shalders will take a wealth of experience with him to his new appointment as head of a vital component of the Australian Defence Force; it may well be needed in the coming years.

* Addendum to the (1997) Defence Efficiency Review

Vice Admiral Russ Shalders, the new Chief of Navy. (Defence)

MANY HAPPY RETURNS

Shortly after this issue of *THE NAVY* is published, on 30 July one of Australia's best-known naval officers, Vice Admiral Sir Richard Innes Peek KBE CB DSC RAN (Rtd) – "Peter" to his friends and colleagues – will celebrate his 91st birthday.

Peter Peek has devoted the greater part of his life to the Navy. He entered the RAN as a cadet midshipman on 1 January 1928 and served in all the Navy's key appointments, retiring as First Naval Member of the Naval Board and Chief of Naval Staff on 30 November 1973. His early years were served in a variety of RN and RAN ships; during World II these included the battleships REVENGE and ROYAL SOVEREIGN and the cruisers HOBART and AUSTRALIA (in which he was wounded when the ship was struck by a Japanese kamikazi aircraft in Leyte Gulf. His first command came in 1951 when he was appointed to the frigate SHOALHAVEN in command and as Senior Officer 1st Frigate Flotilla; other commands were the destroyers BATAAN and TOBRUK – the last-named twice, the second as Captain(D) of the 10th Destroyer Squadron – and the carriers SYDNEY and MELBOURNE. His final sea appointment was Flag Officer Commanding HMA Fleet.

Admiral Peek had a number of shore appointments including DTSR (Tactics, Trials & Staff Requirements) as a Lieutenant Commander, DofP(Director of Plans) as a Commander, DCNP (Deputy Chief of Naval Personnel) as an Acting Captain, and as a Flag Officer – 4th Naval Member, 2nd Naval Member and DCNS (Deputy Chief of Naval Staff). Quite a career!

Peter Peek farmed near Cooma (NSW) on retirement before eventually settling at his present home in Canberra with the ever-patient Lady Catherine Peek. His interest in the Navy has not however waned in the slightest as several members of the Parliament and others are well aware.

As Chief of Naval Staff Admiral Peek believed in and supported the Navy League in its efforts to promote maritime awareness in the community and he has continued to actively support the League in retirement. We are grateful and wish him many more productive years to come.

VADM 'Peter' Peek, CNS, 1972

The Battle of Tsushima, Part 1
A Voyage to Annihilation via Damnation

By Ian Johnson

One hundred years ago on 27 May, 1905 the first fleet battle of the twentieth century took place. The Battle of Tsushima was one of the last acts of the Russo-Japanese War (1904-05). It would be the most dominating display of seamanship and firepower since the Royal Navy under Nelson at the Battle of the Nile, and the most telling strategic victory since Nelson's at Trafalgar one hundred years before. Yet before this battle one of the most remarkable events in naval history took place. What began as the reinforcement of the Russian Pacific Fleet by the Baltic Fleet turned into the cruise of the damned. Incompetence, apathy, poor training, combined with a tenuous supply situation and poor political and strategic planning would lead 60 warships over 18,000 miles to face total annihilation by the Imperial Japanese Navy.

The war began after several years of tension between both countries on the night of 8 February 1904. On the orders of the Emperor a Japanese destroyer flotilla conducted a surprise attack on Port Arthur (Lu-Shun) in Korea. Three Russian battleships were hit while the use of torpedo nets saved several more from destruction. This attack represents a turning point in history, as it was the first time an Asian nation successfully engaged a European power. In the months that followed both land and sea attacks by the Japanese military would gain the upper hand. By October 1904 the Imperial Japanese Navy and Army had effectively bottled the Russian forces in and around Port Arthur, which was the primary objective for the Japanese and one of two Russian ports in the Far East.

On 9 October after months of delay Tsar Nicholas II ordered the Baltic Fleet from Reval Naval Base in St Petersburg to sail to the Far East to break through the Japanese lines. Commanding this fleet was Rear Admiral Zinovy Petrovich Rozhdestvensky. A rarity in the Tsarist Navy, Rozhdestvensky was both experienced as well as a favourite of Tsar Nicholas II. At 57 years of age Rozhdestvensky was at the time Chief of the Russian Naval General Staff when he was ordered to Reval to take command of the Baltic Fleet. Within Russia he was considered a brilliant commander and tactician as well as a perfectionist toward himself and his men and until assuming command at Reval had not put a foot wrong during his career.

Waiting for Rozhdestvensky was Admiral Togo Heihechiro. Admiral Togo was the mastermind of naval operations that had eliminated the Russian Pacific Fleet as a factor in the war.

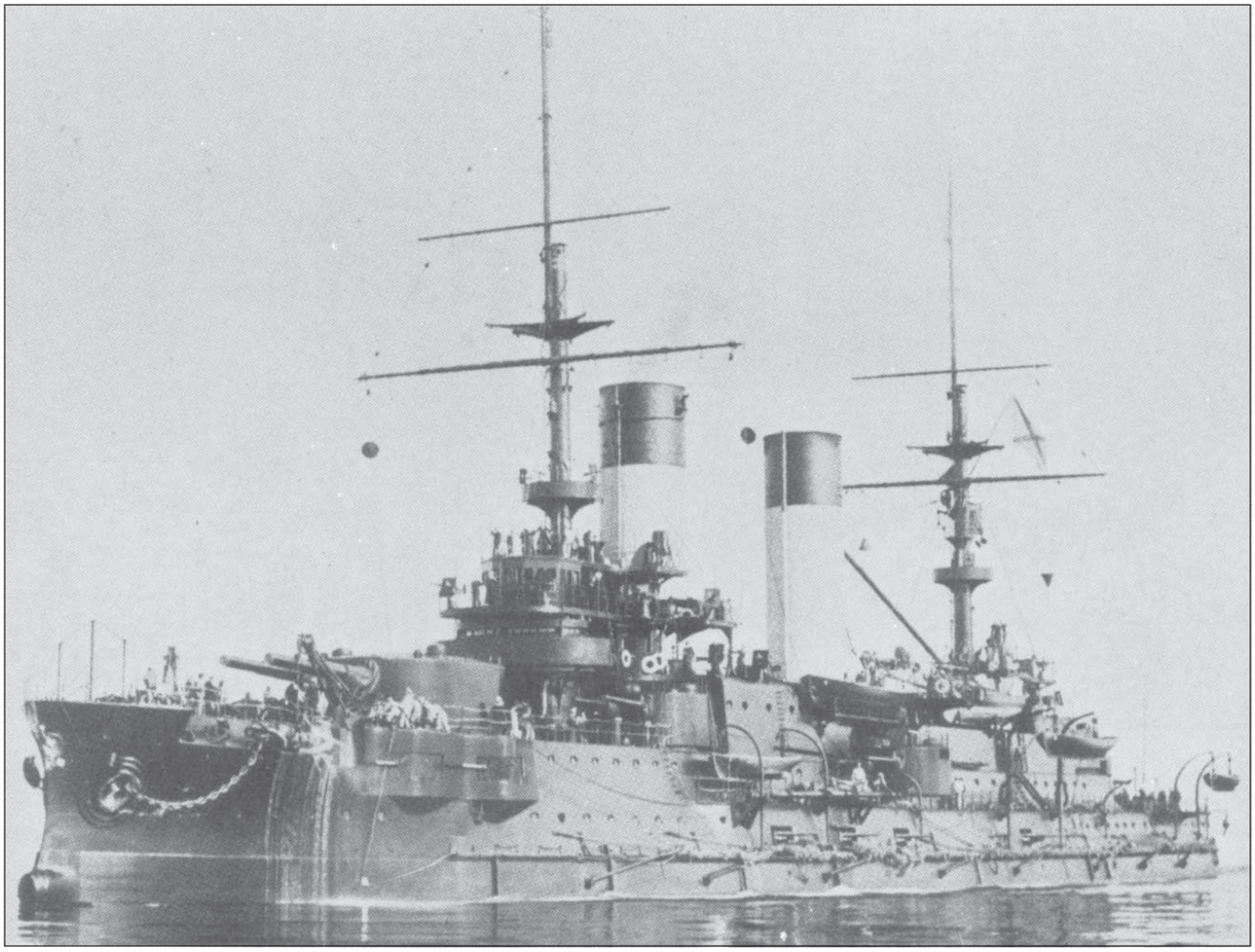
On 9 October as ships of the fleet departed Kronstadt for Reval the battleship ORYOL ran aground on a sandbar whilst under the care of tugboats. For more than a day ORYOL could be seen as dredgers dug around the battleship before she broke free of the bottom. The 13,300-ton battleship then headed for Reval where the rest of the fleet was waiting. With the news of defeats from the Pacific general knowledge, many of the Russian sailors saw this event as sign of things to come.

When the Baltic fleet arrived at Reval RADM Rozhdestvensky ordered battle drills against a torpedo attack. The drills ended in mass confusion and Rozhdestvensky began to realise the work in front of him. Before the fleet left Reval Tsar Nicholas II inspected the fleet and to every ship, exhorted vengeance on the insolent Japanese for the everlasting glory of Holy Russia. Many sailors who heard the Tsar wondered if this voyage would be as successful as the Tsar's words.

October 15 saw the departure of the Baltic Fleet from Reval. Renamed the Second Pacific Squadron the Tsar was sending the newly-completed battleship SUVOROFF (Fleet Flagship) along with her sister-ships, the ORYOL, BORODINO, and ALEXANDER III. These battleships were the backbone of a fleet of 42 vessels that the Russians regarded as invincible. As the fleet sailed through the Baltic the Russian crews were nervous about possible Japanese forces nearby. RADM Rozhdestvensky was informed of his promotion to Vice Admiral as the fleet approached Cape Skagen, Norway. On 20 October at Cape Skagen the business of coaling and resupply began before VADM Rozhdestvensky ordered the fleet to prepare for immediate departure. Many in the fleet believed that Rozhdestvensky had secret information on Japanese destroyers waiting ahead of the fleet, thus the decision to depart. The fleet was formed into six detachments and each detachment had it's own command.

As the fleet sailed into the North Sea the nerves of the Russian sailors began to fray as seagulls were mistaken as enemy dirigibles. The destroyers and cruisers lead the fleet on a course to take them to the Straits of Dover. The rumours on Japanese ships nearby continued to grow. As they sailed deeper into the North Sea those frayed nerves would give way to hysteria.

On the night of 22 October the Russian fleet was passing through the southern reaches of the North Sea. At 2000hrs the repair ship KAMCHATKA reported to the Flagship SUVOROFF that they were being chased by torpedo boats. With repeated calls KAMCHATKA convinced Rozhdestvensky and his staff that something was happening.



The Russian Borodino class battleship IMPERATOR ALEXANDER.

Without confirming the reports from KAMCHATKA, at 2100hrs the rest of the fleet was signalled to prepare for torpedo boat attack from stern. The crews moved to their battle stations, the continuing dread of a Japanese attack demoralising everybody.

Just after midnight the fleet was passing Dodger Bank, a rich fishing ground. When lookouts on SUVOROFF spotted tricoloured flares a short distance away, the battleship turned on its searchlights. The lights illuminated the British fishing fleet. To the Russians it was the final straw in a frenzy of rumours and the 12-inch guns of SUVOROFF opened fire. The confusion spread to the other ships and they began to engage the trawlers.

Onboard the Russian ships chaos reined as the lack of information along with the lack of experience had most sailors believing that they were surrounded. Onboard ORYOL they had what they believed was a Japanese cruiser in their sights and opened fire. When BORODINO fired its 12-inch gun the crew of ORYOL believed that there had been a torpedo hit, either to them or the BORODINO.

When it became apparent to Rozhdestvensky that the ships were not Japanese he ordered the fleet to cease-fire. Even then onboard his flagship he had to personally ensure that SUVOROFF guns fell silent.

After nearly 12 minutes the end result was one trawler sunk, many more with varying degrees of damage. For the ORYOL their joy turned to horror when they discovered their target was the First Class cruiser AURORA that had been damaged by 5 hits.

For the Russians it was an embarrassing moment and a major diplomatic incident that would have serious repercussions for the fleet.

While the diplomats sorted out the mess from the 'Dogger Bank affair' the fleet moved quickly through the Dover Straits and into the Bay of Biscay. Onboard SUVOROFF, VADM Rozhdestvensky was incensed with both the incident at Dogger Bank and the abysmal gunnery performance displayed by what he believed were first class ships.

After an uneventful few days the fleet sighted the Spanish shore on 27 October and headed for the port of Vigo. Waiting there were five German collier ships ready to resupply the fleet. As the fleet anchored Spanish Authorities boarded the SUVOROFF and informed Rozhdestvensky that due to Spain's neutrality, and British diplomatic pressure after the Dogger Bank incident, the fleet could not resupply in Spanish waters. Rozhdestvensky countered by informing them that the fleet had not been refuelled fully at Norway and that the fleet could not go much further. After intense diplomatic manoeuvring the Spanish agreed to allow 400 tons of coal per battleship with other ships getting enough to steam on.

As the fleet refuelled, Rozhdestvensky and the rest of the fleet heard more on the aftermath of the incident at Dogger Bank. While the political fallout continued the Royal Navy deployed a squadron of four cruisers to shadow the Russians as

they sailed from Vigo to their next port of Tangiers. Rozhdestvensky, still furious with the fleet, ordered drills, drills and more drills at all times of the day and night.

On 2 November saw the majority of the fleet anchor at Tangiers, Morocco, with the fleet destroyers and several transports detaching from the main fleet to arrive in Algiers. Later that day Rozhdestvensky detached three ironclads and three cruisers to head via the Suez Canal for the fleet rendezvous at Madagascar. Although the British put pressure on the Moroccan Government to refuse the Russians access the visit continued amidst the growing bad weather and coaling the fleet off Tangiers became a problem. After a successful port visit the fleet left on 4 November.

The fleet with the destroyers and transports back with them headed south towards the equator. For ships designed for colder climates the conditions below decks were unbearable, the engine rooms of the fleet had to content with 140F+ temperatures as coal was shovelled into the boilers.

The next port of call was Dakar, Senegal, on 12 November. Eleven German colliers were waiting as the fleet arrived. Rozhdestvensky ordered each ship to load additional coal. In the case of ORYOL and her sister ships their coal bunkers would hold 1100 tons, but were ordered to load an extra 600 tons. As this began the French authorities in Dakar informed Rozhdestvensky to stop resupply until they got permission from their government. The Admiral ignored them and continued the task at hand. Even at night the temperature was 77F and loading coal during the day saw many sailors drop from heat stress. By the time the French government sent word that the fleet was not to load supplies there it was too late. Coal was stacked in every spare space in the fleet and the ships crews had tried to clean up the mess.

By 15 November the fleet was underway again but the strain of the voyage, the tenuous supply situation and the tropical heat were taking their toll. Many of the crew were falling ill with the coal dust. The stokers especially were tired and haggard from the heat and noise of the engine rooms. Discipline within the fleet began to drop; with those crew arrested and put in the brig enjoying a few days off work.

The Russian fleet sailed towards the Gabon estuary on the equator. Rozhdestvensky tried to bring the fleet up to battle conditions with drills. The daily drill of steering the ships with backup methods nearly took its toll, ORYOL almost collided with SUVOROFF. By the time the fleet reached French Equatorial Africa (modern day Gabon) the crews, and many of the officers, were sick, tired, and fed up with the situation.

It did not improve when on 25 November the fleet arrived off the capital of French Equatorial Africa, Libreville. For two days the fleet waited for two German colliers while the French Governor tried to move the fleet on. But VADM Rozhdestvensky refused to move. While at Libreville the minor discipline problems grew into larger ones. Onboard the repair ship KAMCHATKA civilian workers and naval engineers came to blows. On several of the transports civilian stokers refused to go on duty. Then several officers of the cruiser DMITRI DONSKOY were arrested for smuggling nurses from a hospital ship to the cruiser. Three officers were sent back to Russia for court martial.

For Rozhdestvensky the strain was total, as even the slightest infraction by anybody would soon feel the Admiral's wrath.

On 30 November the fleet was underway in the South Atlantic. On 5 December they arrived at Great Fish Bay south of Angola where more German colliers waited. As they loaded coal a Portuguese gunboat sailed towards them and challenged Rozhdestvensky's right to load stores there. After a short exchange the Captain of the gunboat sent a formal protest to the Russian Government.

After departing Great Fish Bay the fleet crossed the Tropic of Capricorn and arrived at the Bay of Angra Pequena in the German colony of South West Africa (modern day Namibia) on 10 December. This rocky harbour afforded little protection from the wind and waves. The destroyers and transports had to wait out to sea. For ORYOL her starboard anchor broke away as they took up anchoring position. Unlike other ports the German officials welcomed the Russians with open arms. But rough weather for three days caused problems and delays before resupply could continue. With concerns over British embargos against the Russians, the use of Cape Town for resupply was ruled out. Rozhdestvensky again ordered extra coal to be loaded so the fleet could sail past South Africa and onto Madagascar. While at Angra Pequena several crewmen throughout the fleet cracked under the strain. While their shipmates did what they could to help these men stay with the fleet until their next port of call.

On 16 December the fleet left South West Africa and rounded the Cape of Good Hope and headed northeast into a storm. On 28 December the fleet arrived at the north east coast of Madagascar. On arriving at the island of Sainte Marie it was plain to see that the rest of the Russian fleet that were sailing via the Suez Canal had not arrived. Only two German colliers were there for resupply. At 1600hrs the hospital ship OREL arrived from Cape Town and with it came the news that the Japanese destroyed the Russian First Pacific Squadron at Port Arthur. The reason for the voyage was now non-existent. A mood of depression began to overrun the fleet.

Rozhdestvensky ordered a ship to head for the port of Tamatave to get hard information on what was happening, as well as to find out where the rest of the Russian fleet was. While waiting for the ship to return the Admiral ordered the fleet to conduct repairs. The next day the ship returned with the information that the rest of the fleet was anchored off Nossi-Bé, on the other side of Madagascar. This was due to British pressure on the French authorities at the French port Diego Suarez, where the ships were to have resupplied, refusing to allow the Russian there.

Other reports arrived, including those of suspected Japanese naval movements in the Indian Ocean. The repairs were put on hold as the fleet began reconnaissance sweeps for the enemy. A storm arrived and the resupply was halted as the fleet headed for the Bay of Tang Tang, which was a better place to continue resupply.

On the 5 January 1905 Rozhdestvensky was informed that Port Arthur had fallen to the Japanese on the 2nd. This piece of news destroyed all the crew's, and most of the officer's, confidence in the mission. Their faith in the invincibility of Holy Russia was now gone, and slowly sailors throughout the

fleet began to talk about defeat at the hands of the Japanese Navy. On the same day the fleet left Tang Tang and headed north where they met the cruisers of the fleet that had sailed via the Suez Canal.

On 6 January the Fleet celebrated Christmas (Russian calendar) off Diego Suarez. For many of the crew this was to be the last happy moment in the Russian Navy.

On 7 January the fleet arrived at Nossi-Bé and the appropriately named town of Hellville. The French authorities came out to SUVOROFF and they warmly greeted Rozhdestvensky and the Russian fleet. Limited shore leave was granted. Resupply continued as all ships were overloaded with coal.

Shortly after Rozhdestvensky learned that another Russian fleet was heading his way. Unlike his, the fleet, known as the Third Pacific Squadron, was full of old, slow ships. As time in Nossi-Bé dragged on, morale dropped lower as the crews were forced to breath coal dust, disease began to take hold, and to top off the misery ill-fitting boots were distributed, much to the sailor's disgust. But they were kept busy with repairs, maintenance, and more drills. The death toll began to climb from accidents, disease, and suicide. On 23 January onboard the cruiser ADMIRAL NAKHIMOFF the crew revolted after enduring poor food for weeks. Rozhdestvensky boarded the cruiser and called those involved Japanese sympathisers and proceeded to hand out punishment to those involved.

Rozhdestvensky's problems did not end there. After much negotiation the German colliers agreed to sail with the fleet as far as the Dutch East Indies (modern day Indonesia). To top off Rozhdestvensky's problems he was still waiting for the Third Pacific Squadron to arrive.

On 26 January in a preview of things to come, a fleet gunnery exercise was a total failure with little to no hits on either a stationary or moving target. This was a massive disappointment to the Admiral as it told him that four months of drills were wasted. The fleet conducted more gunnery drills with the same result.

On 13 February six Russian warships arrived at Nossi-Bé as reinforcements. The news from home that these warships brought shocked every sailor. On 22 January three hundred thousand men marched on the Tsar's winter palace in St Petersburg and without warning were fired on with over two thousand people dead. This event shattered the faith in the Tsar, and would slowly begin the Russian Navy's fall into revolution.

With morale non-existent, the sick parades got longer, drunkenness became a major problem. Liberty in Hellville turned into a depressing mix of drinking and gambling, with increasing civil disorder. Arrests amongst the fleet grew as the officers tried in vain to revive morale. Even Rozhdestvensky was affected, his temper at boiling point as the wait for the Third Pacific Squadron. Realising he either stayed and watched the problems of the fleet continue or left without the Third Pacific Squadron, the Admiral ordered the fleet to prepare for departure. Supply ships arrived with much needed food and spare parts, and again the fleet took on more supplies than they could carry.

On 15 March the fleet left Madagascar with the French authorities wishing them well. The crews were despondent with the news of events both in Russia and Port Arthur weighing on their minds. Men threw themselves overboard rather than continue the deployment. Engines were breaking down with the heat and the fleet had to slow as repairs took place. Resupply, which was hard enough in harbour, took on an added element with the continuing hot weather as the fleet conducted resupply operations at sea.

After a twenty day voyage the fleet arrived on 3 April at Sumatra and sailed through the Straits of Malacca. As the fleet advanced the crews began to see every ship as a Japanese warship and paranoia throughout the fleet skyrocketed.

Off Singapore the Russian Consul boarded SUVOROFF and informed Rozhdestvensky that the Japanese fleet was operating nearby. In fact that was not the case and this report increased the tension. The Consul also informed the Admiral that the Third Pacific Squadron had just left Djibouti and would meet them off Vietnam.

From Singapore the destroyers of the Russian fleet patrolled ahead for the Japanese fleet but found nothing. By 12 April the fleet had been underway for 28 days, steamed nearly 5,200 miles (8,360 kilometres), with the fleet stopping 112 times for repairs, when they arrived in Cam Ranh Bay in the French colony of Vietnam.

The fleet spent more than a week at Cam Ranh Bay resupplying and waiting for the Third Pacific Squadron. On the 20 April the French Government ordered the fleet to leave Cam Ranh Bay after Japanese diplomatic pressure. The fleet left the next day but only to sail to the Bay of Van Fong further up the coast to continue with the resupply and repairs to the fleet.

On 28 April while at Van Fong the crew of ORYOL revolted after poor quality meat was served. The next day was Russian Easter Sunday. On 30 April Rozhdestvensky boarded ORYOL and arrested what he believed were the ringleaders of the revolt two days prior. They were not, and the ringleader remained onboard. But events like the revolt were springing up through the fleet. With no morale and no hope of making it back to Russia alive the sailors of the fleet were beyond caring.

On 7 May the Third Pacific Squadron contacted Rozhdestvensky and informed him that they were near. On the 8th the fleet got underway from Van Fong Bay and assumed battle formation. At 1400hrs the Third Pacific Squadron finally rendezvous with the Second Pacific Squadron. Rozhdestvensky went over to NICHOLAS I and met with Rear Admiral Nebogatoff, commander of the Third Squadron briefly before returning to his flagship. It would be the only time both Admirals would meet face to face.

On 9 May the Third Pacific Squadron arrived at the Gulf of Kua-Bé for resupply and repairs as Rozhdestvensky conducted battle drills nearby.

On May 13 the entire fleet, now numbering 60 ships ranging from battleships to transports, departed the coastline of Vietnam.

17 May saw an ocean resupply for the fleet. Coal dust layered the ocean as the fleet took on more coal stores. By now the sailors of the fleet knew that Rozhdestvensky was to get the fleet to Vladivostock. To do so the fleet would sail through

the Sea of Japan. There were three routes. Korea Strait, Tsugaru Strait, or La Perouse. With the current coal supply the Sea of Japan was considered, as sailing far to the east coast of Japan would see the fleet run out of fuel.

Rozhdestvensky's fleet had its last supply of coal on May 23 north of Formosa (Taiwan). At this time the Admiral gave his fleet instructions for the upcoming battle. As the fleet sailed on the temperature began to drop. The crews of the fleet realised that imminent death could be moments away. This lead to crews forgetting previous bad behaviour and doing their duties in a professional manner. Even relations between officers and crew improved.

On 25 May the day was rainy as the colliers departed the fleet for China. It was on this day that officers on the flagship SUVOROFF realised that the Admiral was leading the fleet to Tsugaru Strait, near the island of Tsushima. This was the worst of the options that Rozhdestvensky had but it was the one he took.

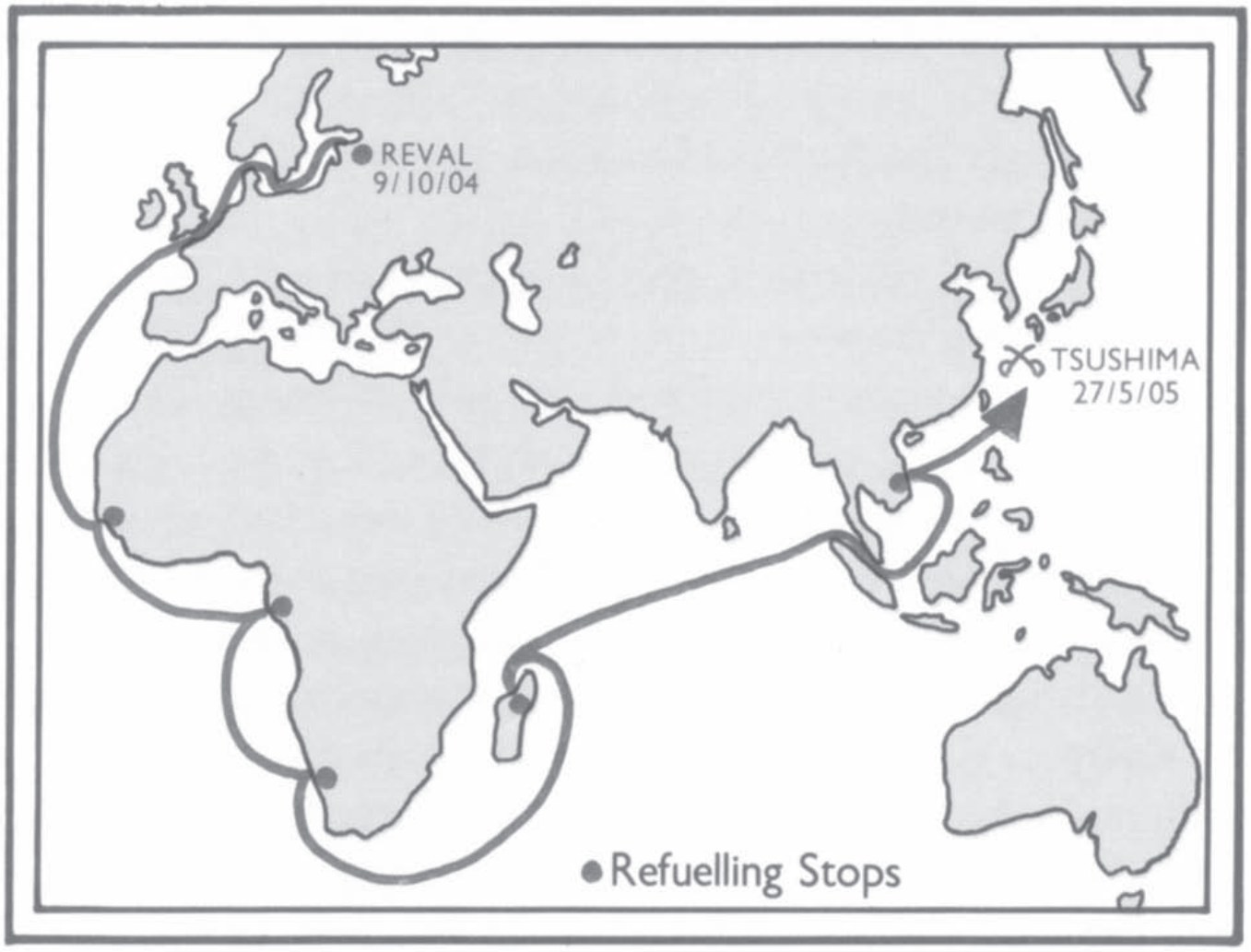
The fleet sailed towards Tsushima with crews feeling that they were nothing but cannon fodder as they continued to conduct battle drills.

The morning of the 26 May saw bright sunshine and calm seas. A manoeuvring exercise conducted that day was as bad as those conducted off Madagascar and they delayed the fleet's arrival at Tsugaru Strait. Onboard every ship in the fleet the crews knew they were five days away from Vladivostock. They also wondered why Rozhdestvensky was taking the most dangerous route there, when the La Perouse Strait was the safer option. Low crew morale as well as the events during the cruise played on Rozhdestvensky's mind and it may have led to the decision to sail through Tsugaru Strait to get to Vladivostock as fast as possible.

A dark and foggy night fell on the fleet. It was quiet until 0500hrs the next morning, 27 of May. Lookouts onboard ORYOL spotted a ship shadowing them. It was the Japanese cruiser SHINANO MARU, the battle of Tsushima was about to begin.

The cruise of the Russian Baltic Fleet was in most respects a disaster from day one. Only the strong will of Vice Admiral Zinovy Petrovich Rozhdestvensky ensured the fleet got there in the first place. They had steamed over 18,000 miles (nearly 29,000 kilometres) with little diplomatic support from St Petersburg. VADM Rozhdestvensky was forced to deal with revolts, an unstable supply line, and a growing frustration in the ability of the fleet to fight. The fall of Port Arthur also had major consequences, changing his mission from one of reinforcement to one of survival of the fleet for use later in the future.

But at 0500hrs on 27 May none of that mattered as the Russian Fleet entered Tsugaru Strait. The Imperial Japanese Navy was waiting for them.



A map showing the doomed Russian Fleet's voyage to destruction.

THE NAVY - 78 Years Young

Recently The Navy League of Australia catalogued its publication *THE NAVY* on microfiche and marked the occasion with a presentation to the Victorian State Library.

On Monday 11 April 2005 at the State Library of Victoria, the Victoria Division of the Navy League launched the product of what was perhaps one of the most ambitious projects ever undertaken by the Navy League of Australia in its 105 year history: the microfiche set of the magazines published by the League, first as the *Navy League Journal* and then as *THE NAVY*, covering the years 1920 to 2004, together with a comprehensive Index (also on microfiche) of those magazines.

The Navy League of Australia had its genesis in Launceston, Tasmania in 1900 and has been in continuous existence ever since. In 1920, the NSW Branch (as it was then called) of the League first produced a monthly magazine: *The Navy League Journal "The official organ of the Navy League, New South Wales Branch",* which was then published continuously until 1932. After a break during the depression years the Journal was again published as a "New Series" from 1938 to 1946 inclusive.

From 1947 to the present day the League has continuously published it as *THE NAVY*; on a monthly basis until 1965 and since then as a quarterly. In all, some 237 issues of the Journal were published and, to the end of 2004, 354 issues of *THE NAVY*. In compiling the microfiche set the League was able to locate all but 19 issues of the Journal (sadly the first ever issue No 1 of 1920 is missing) and all but 8 issues of *THE NAVY*.

The index component of the project had its genesis in a casual comment by the Chairman of the League's Federal Advisory Council, CMDR Geoffrey Evans OBE VRD, about the value of the material contained in the magazines over such a long period but the difficulties in accessing that material owing to the lack of any indexing. In 1998 that prompted the President of the Victoria Division, CMDR John Wilkins RFD, to undertake the index project – a daunting task – which in turn led to a world-wide search to locate as complete a set as possible of all the magazines so that the index could be comprehensive.

The front cover of Vol 1 No2 of The Navy League Journal

Research revealed that the most complete set from 1920 to the present was held by the State Library of NSW, with a further set from 1938 held by the National Library in Canberra. The 1920-1932 copies of '*The Navy League Journal of NSW'*, held by the Library of NSW, was a complete surprise for no one was aware that for twelve years the NSW Branch of the Navy League had published its own magazine. It was not published in the depression years 1933-1937 and only restarted with the April 1938 'New Series' issue. This commenced again as Vol.1 No.1, which caused the misconception that the earliest issue was 1938 when it had really started in 1920 under the guidance of the NSW Branch President, Sir W.P. Cussen KCMG, Chief Justice of NSW, and his committee.

The then Secretary of the Victoria Division, Gavan Burn, contacted all main public libraries in each State in Australia, the National Library in Canberra and the Australian War Memorial as well as made inquiries as far afield as the UK and Canada. No magazines were located in any other State Library with the exception of an isolated copy or two in South Australia. The War Memorial kindly returned a list of Navy League file references held by National Archives in various locations around Australia and these also showed great promise for research but were not easily available for reference.

With the active assistance of Otto Albert, AO, RFD, RD, President NSW Division, Navy League of Australia, and as the Magazine's Manager, he supplied sample photocopies of the years 1920-1932, 1938 and 1947, and so the expansion of the 1975-2000 index started.

As the work progressed it was proposed that a full set of copies of all known issues of the Journal be produced on CD ROM or on Microfiche. The storage medium was settled by the Library of NSW who opted for a microfiche copy as technology was changing at such a rapid rate that CD copies may not be able to be read in the future.

An interim set of microfiche was produced by Otto Albert so that the John Wilkins could continue with the indexing and a microfiche reader printer was acquired to carry out this task. The Australian National Library loaned copies of journals to the Library of NSW for microfiching and donations and loans of other copies were made by individuals, such as the Victorian State President of the Naval Association of Australia, Ray Gill, and others, who gifted many issues to fill gaps in current library collections.

By October 2000 John Wilkins had produced an initial index 1975-2000 which was available for the League's Centenary celebrations in Launceston. The index was enthusiastically welcomed by the League's Federal Council which then adopted a national project of making access to the magazines and index more accessible to the public than they would be as hard copy in either the NSW or National libraries. It was thus that the microfiche project was conceived.

With the major involvement of CMDR Otto Albert AO RFD RD, President of the NSW Division of the League (who underwrote the project), and with the active and enthusiastic participation of the State Library of NSW, the National Library and a number of individual collectors, all copies of the Journal and of *THE NAVY* which could be located, together with John Wilkins' now completed index, have been copied onto microfiche and are now contained in a boxed set of some 970 fiche. By early 2005 John Wilkins extended the index to 2004 and the microfiching was completed under Otto Albert's direction.

The State Library of Victoria kindly hosted the launch of the magazine and index microfiche boxed set at a function held at the Library in the presence of Sir James Gobbo AC, Chairman of the National Library, The Hon Kevin Andrews MHR, Ms Anne-Marie Schwirtlich CEO and Librarian of the State Library of Victoria, other distinguished guests and representatives of the Navy League. Invited guests and members and partners of the Navy League Federal and Victorian State Executives attended. The Project sponsor, Otto Albert AO RFD RD, flew down from Sydney to be present on this occasion.

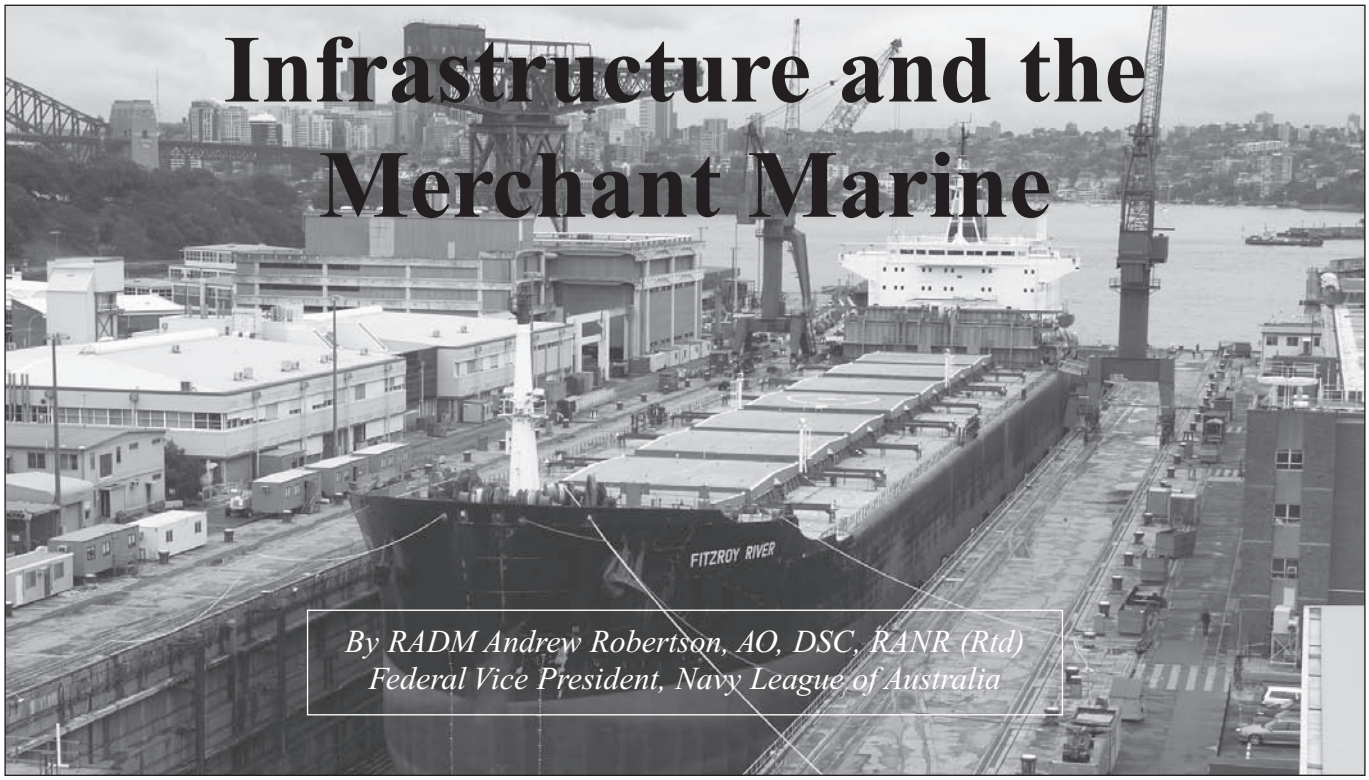
At the function presentations of the sets were made by the Federal President of the League, CMDR Graham Harris RFD, supported by CMDR Wilkins and CMDR Albert. Recipients were the National Library, the Federal Parliamentary Library, the State Library of Victoria, the University of Melbourne Library, the Royal Australian Naval College Library, and the RAN Sea Power Centre Library.

Sets are also being presented to the NSW State Library, the other State and Territory Libraries, and to the Library of the ANU, AWM and the Australian Defence Force Academy.

The 1920-2004 Index (Word for Windows version) has also been made available on CD. Members of the public, not having immediate access to the library holdings of the Navy League Journal or the Microfiche sets, have the opportunity of obtaining their own copy of the CD index and then ordering selected articles through email at ausnavyleague@mac.com. A copy will be made from the NLA master microfiche 1920-2004 copy at a charge of 20 cents a page plus postage and packaging. Copies of the CD Index are available at $10 each, including postage and GST.

Sir James Gobbo AC, Chairman of the National Library (centre) accepts copies from CMDR John Wilkins RFD (Rtd), President Victorian Division (right), of the microfiche record of *THE NAVY.*

Infrastructure and the Merchant Marine



By RADM Andrew Robertson, AO, DSC, RANR (Rtd)
Federal Vice President, Navy League of Australia

The merchant ship *FITZROY RIVER* in Sydney's Captain Cook Drydock at Garden island. As an island nation the Government should be doing more to promote the use of the sea, particularly given that every major city (bar Canberra) is totally accessible from the sea. Sizeable merchant ships such as this can ease the strain on the road and rail networks around Australia. (ADI)

Much has been written lately concerning the state of the nation's infrastructure, particularly road, rail, water and electricity. However, while the effects of transport – bottlenecks to, and in, our ports - have been well publicised, one important area which has been almost completely ignored is Australian-owned shipping.

Following many decades of major problems in our merchant ships and in the ports, Australia has largely walked away from shipping, leaving the carriage of our goods to others.

However, times have changed. Crews in the few remaining Australian-owned vessels are now down to the average of those of OECD countries. Our ports are much improved in efficiency. There is comparatively little industrial unrest and our international trade, particularly in commodities, has grown greatly.

We are among the top 20 trading nations in the world. Our imports and exports by sea (over 99% by weight of the total) are now in the order of 600 million tonnes per year, of which some 500 million tonnes are exports (say about 6,000 ship loads). However, very little is carried in Australian ships.

There is now little interstate coastal trade and foreign vessels are taking a proportion of the trade available. Meanwhile our roads and railways are having difficulty in coping with requirements and, while unavoidable, the costs to upgrade both these forms of transport are astronomical. And the serious road toll in human lives continues, often involving heavy transport vehicles, a proportion of whose loads could be transported by rail or sea.

We are one of the few countries to be blessed with almost direct connections by sea between all of our major centres of industry, and sea routes require no maintenance and negligible update costs for navigation. And yet this form of interstate transport is now hardly used.

What would be the advantages in developing our merchant marine?

- We currently have a serious balance of payments problem. A share in our overseas transport would be beneficial and aid the economy overall, with a proportion of the huge transport value flowing back to Australia.
- An increase in interstate shipping would ease the pressure on our roads and railways.
- An increase in Australian shipping would lead to an increase in local ship repair, ship management, ship providoring, and even ship-building and insurance, with clear benefits to employment and the economy.
- In any future major war involving our nation, Australian-controlled shipping would be needed to support our Defence Force and to ensure essential supplies reached Australia.
- A healthy merchant marine is required to be able to produce skilled mariners to crew our many pilot and port services required in our approximately 70 ports.
- A strong merchant marine would provide a source of partly-trained personnel to help crew our Navy in time of war (as proved so valuable in WW2).

And the disadvantages? On the assumption that, given suitable incentives, capital would come from the private sector, there would be some Government outlay on infrastructure and perhaps some temporary loss of tax revenue.

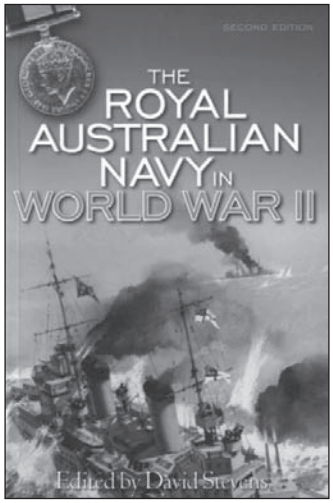
There therefore seems a strong argument that this matter should be addressed to set in place taxation, crewing, flagging, port infrastructure, and other measures to encourage Australian business to re-enter this field. We have a splendid Maritime College, excellent innovative naval architects who lead the world in some forms of ship design, some fine shipyards, and the example of several small countries with high standards of living including Norway, Denmark and Sweden, who have created great merchant fleets.

There would appear to be every reason for a maritime nation like Australia to develop its merchant shipping in a major way. This will need a concerted Government initiative to get the ball rolling.

PRODUCT REVIEW

THE ROYAL AUSTRALIAN NAVY IN WORLD WAR II (SECOND EDITION)

Edited By David Stevens
Soft Cover. 316 pages.
Published by Allen & Unwin
www.allenandunwin.com
Reviewed by Ian Johnson



The Royal Australian Navy in World War II (Second edition) is an updated, and insightful look at various events that the RAN participated in during the Second World War.

Some of the little known areas explored in *The Royal Australian Navy in World War II* include 'Australians in Midget class submarines', 'Touching on Fairmiles', 'The RAN Hydrographical Branch 1942- 1945', and 'Intrigue Master: Commander R.B.M. Long, RAN, of Naval Intelligence," hold their place alongside chapters on operations of the RAN in the Mediterranean and Pacific theatres of war.

One of the areas covered in detail in *The Royal Australian Navy in World War II* is the beginning of the demise of relations with the Royal Navy and the ascension of the United States Navy in the area of naval and defence politics.

Two in-depth chapters on two stalwarts of the RAN, Vice Admiral John Collins and Rear Admiral Harold Farncomb, are included and shed new light on the lives of these legends of the navy.

With such respected contributors as Commodore J.V.P. Goldrick RAN, Dr Eric Grove, Kathryn Spurling, Dr Chris Clark, and well illustrated and edited by Dr David Stevens, *The Royal Australian Navy in World War II* is a fascinating read for both the novice and the serious student of the Royal Australian Navy. Well worth getting a copy.

ANOTHER PLACE, ANOTHER TIME: A U-BOAT OFFICER'S WARTIME ALBUM

By: Werner Hirschmann with Donald E. Graves
Chatham Publishing, London, 2004
255p, Bibliography, Illustrated.
Review by Joe Straczek

During the Second World War many of those who served in the German *U-boot-Waffe* failed to return to tell their story. Werner Hirschmann is one of those who did survive. So the story he tells in *Another Place, Another Time: A U-Boat Officer's Wartime Album* is as much the story of those who died as it is his personal story.

As a youth Werner Hirschmann grew up with an ambition to join the Navy. His boyhood heroes were men like Nelson, Hawke and DeRuyter. He joined the *Marine-Hitlerjungend* and from there he gained entry into the German Navy as an officer candidate. The author undertook basic training and was subsequently posted to a destroyer for initial sea training. After this it was onto engineering school and then a career as a submarine engineer until the end of the war.

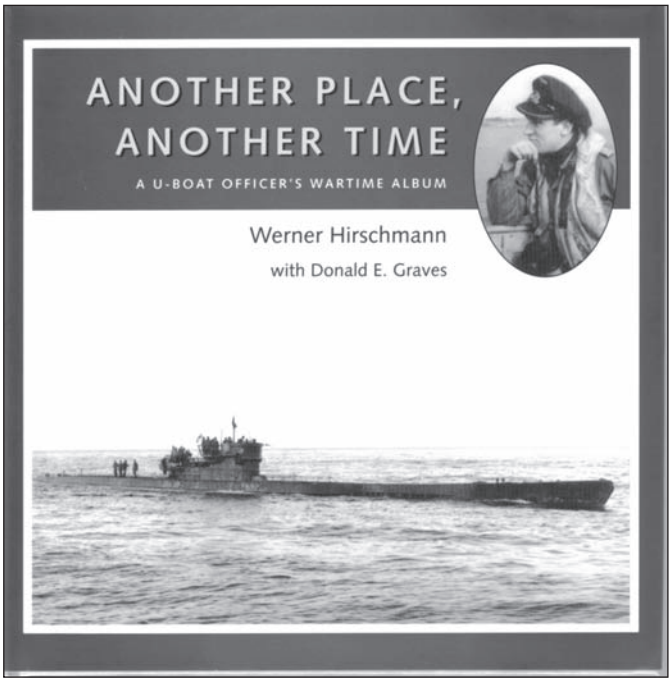
Though the setting of this story is the wartime German Navy the author's description of his training and sea time will ring true to many who have undertaken naval service. As will some of the pranks that the young trainees got up to, such as putting the wardroom furniture on the roof.

The major part of this story records Hirschmann's wartime service in U-boats. This is written in the same lively and descriptive style as the earlier chapters and helps produce a book that will make readers of any background feel they are part of. There is no politics, no jingoism, just memories both happy and melancholy. Added to the words are the photographs, photos of ordinary people who, as an entire generation did in 1939-45, served their country.

One of the more poignant events described by the author is the sinking of the Canadian ship HMCS ESQUIMALT, the last Canadian ship sunk during the Second World War. ESQUIMALT was sunk on 16 April 1945 by *U-190*, of which the author was the engineer. Some three weeks later the war ended and the crew of *U-190* found themselves surrendering to the RCN. Many had concerns as to the treatment they might receive. However, as the author relates this period, and this subsequent time in internment, his treatment in Canada was better than in Britain when he was being repatriated to Germany. The author eventually returned to Canada and in a gesture of reconciliation was made an Honorary Life Member of the Esquimalt Memorial Association.

The book finishes with a photographic tour of a German Type IXC U-boat and a personal perspective of life onboard a U-boat. The photos for the visual tour were taken onboard *U-190* and *U-889*.

Another Place, Another Time: A U-Boat Officer's Wartime Album is a very readable book and highly recommended. It tells the story of many, through the words of one. A story which, now 60 years after the war, serves to remind people of that momentous struggle and the young men who fought it.



STATEMENT of POLICY

Navy League of Australia

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

The Navy League:

- Believes Australia can be defended against attack by other than a super or major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space around us and to contribute to defending essential lines of sea and air communication to our allies.
- Supports the ANZUS Treaty and the future reintegration of New Zealand as a full partner.
- Urges a close relationship with the nearer ASEAN countries, PNG and the Island States of the South Pacific.
- Advocates the acquisition of the most modern armaments, surveillance systems and sensors to ensure that the ADF maintains some technological advantages over forces in our general area.
- Supports the acquisition of unmanned aircraft such as the GLOBAL HAWK and UCAVs.
- Believes there must be a significant deterrent element in the ADF capable of powerful retaliation at considerable distances from Australia.
- Believes the ADF must have the capability to protect essential shipping at considerable distances from Australia, as well as in coastal waters.
- Supports the concept of a strong modern Air Force and highly mobile Army, capable of island and jungle warfare as well as the defence of Northern Australia and with the requisite skills and equipment to play its part in combating terrorism.
- Advocates that a proportion of the projected new fighters for the ADF be of the STOVL version to enable operation from suitable ships and minor airfields to support overseas deployments.
- Supports the development of amphibious forces to ensure the security of our offshore territories and to enable assistance to be provided by sea as well as by air to friendly island states in our area and to allies.
- Endorses the control of Coastal Surveillance by the defence force and the development of the capability for patrol and surveillance of the ocean areas all around the Australian coast and island territories, including the Southern Ocean.
- Advocates measures to foster a build-up of Australian-owned shipping to ensure the carriage of essential cargoes in war.

As to the RAN, the League:

- Supports the concept of a Navy capable of effective action off both East and West coasts simultaneously and advocates a gradual build up of the Fleet and its afloat support ships to ensure that, in conjunction with the RAAF, this can be achieved against any force which could be deployed in our general area.
- Is concerned that the offensive and defensive capability of the RAN has decreased markedly in recent decades and that with the paying-off of the DDGs, the Fleet lacks area air defence and has a reduced capability for support of ground forces.
- Advocates the very early acquisition of the projected Air Warfare Destroyers.
- Advocates the acquisition of long-range precision weapons and the capability of applying long-range precision fire to increase the present limited power projection, support and deterrent capability of the RAN.
- Advocates the acquisition at an early date of integrated air power in the fleet to ensure that ADF deployments can be fully defended and supported from the sea.
- Advocates that all Australian warships should be equipped with some form of defence against missiles.
- Advocates the future build up of submarine strength to at least 8 vessels.
- Advocates that in any future submarine construction program all forms of propulsion be examined with a view to selecting the most advantageous operationally.
- Supports the maintenance and continuing development of a balanced fleet including a mine-countermeasures force, a hydrographic/ oceanographic element, a patrol boat force capable of operating in severe sea states, and adequate afloat support vessels.
- Supports the development of defence industry supported by strong research and design organisations capable of constructing and supporting all needed types of warships and support vessels.
- Advocates the retention in a Reserve Fleet of Naval vessels of potential value in defence emergency.
- Supports the maintenance of a strong Naval Reserve to help crew vessels and aircraft in reserve, or taken up for service, and for specialised tasks in time of defence emergency.
- Supports the maintenance of a strong Australian Navy Cadets organisation.

The League:

Calls for a bipartisan political approach to national defence with a commitment to a steady long-term build-up in our national defence capability including the required industrial infrastructure.

While recognising budgetary constraints, believes that, given leadership by successive governments, Australia can defend itself in the longer term within acceptable financial, economic and manpower parameters.

The RN Type 42 Batch I air warfare destroyer, HMS LIVERPOOL fires the second of two Sea Dart missiles during a salvo firing demonstration. (RN)

HMAS GAWLER alongside NUSHIP ARMIDALE. Note the size difference in the two patrol boats. The new larger Armidale class boat's sea keeping abilities will certainly be welcome to the crews. Given the endurance and durability of the vessels the RAN may operate two crews on some of the new patrol boats. (RAN)

HMNZS CANTERBURY in Sydney Harbour with Fort Denison and the Fremantle class patrol boat HMAS IPSWICH in the background (right).
This was one of CANTERBURY's last trips to Sydney before being decommissioned. (Mark Schweikert)