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THE NAVY

The Magazine of the Navy League of Australia

The Battle of Britain – A Seapower Victory

The AWD's and Our Real Frontier

The German Navy Today

The 2007 Annual Creswell Oration

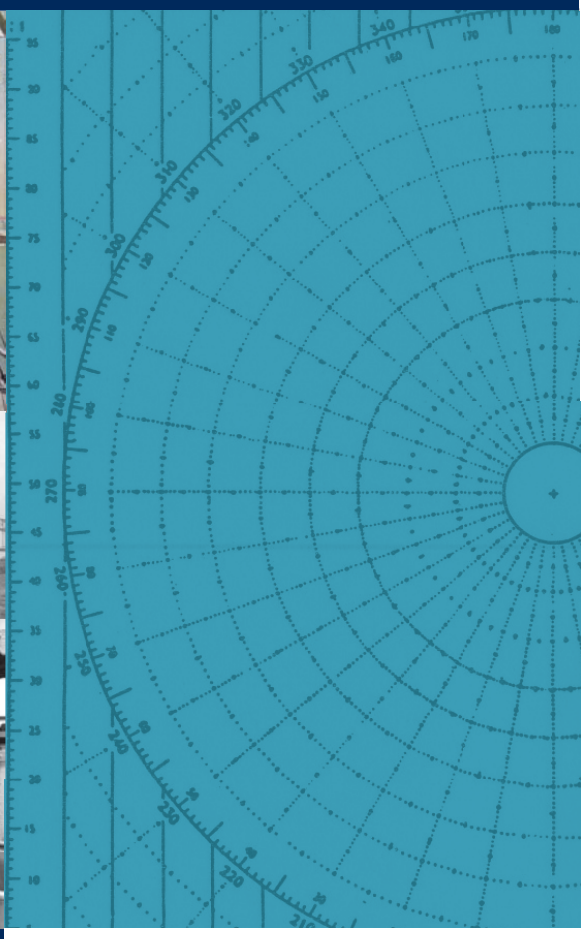
Halfway Around the World in Eighty days

ISSN 1322-629X

Australia's Leading Naval Magazine Since 1938

Naval Networks: The Dominance of Communications in Maritime Operations

2007 King-Hall Naval History Conference



NAVAL NETWORKS: THE DOMINANCE OF COMMUNICATIONS IN MARITIME OPERATIONS

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 fifth biennial King-Hall Naval History Conference, 24 July and 26-27 July 2007. This will be a major international conference with distinguished speakers from Australia, Canada, the United Kingdom and the United States of America. The keynote speaker will be Professor N.A.M. Rodger, author of the much acclaimed multi-volume *A Naval History of Britain*.

The conference program will address the shifting demands facing both national and combined international sea power, together with case studies of command, control, communications and intelligence taken from the ancient world through to the 21st century. The conference will offer new insights into the future face of maritime strategy, the changing nature of global connections, and the continuing nexus between communications and command at sea.

GENERAL INFORMATION

Venue:
24 July: ANZ Theatre, Australian National Maritime Museum, Darling Harbour, Sydney NSW
26-27 July: Rydges Lakeside Canberra, London Circuit, Canberra ACT

Registration:
Sydney: $100.00 per person
Canberra: $200.00 per person
(Registration 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 26 July in the Anzac Hall, Australian War Memorial, Anzac Parade, Campbell, ACT. Cost will be $90.00 per person.

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NAVY

THE NAVY

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The Navy League of Australia

The Real Battle of Britain?

With another 'Battle of Britain' day fast approaching (15 September), we present an article on the event and make the case that it was not solely an air power victory. Rather, the threat posed by the 1940s Royal Navy, the world's pre-eminent naval superpower, meant that an invasion via the sea by The Third Reich was not possible.

This new perspective gained notoriety last year when expressed by two senior military history lecturers at the UK's Joint Services Command and Staff College. The College teaches star ranked officers from the UK's three services about military history in order to prepare them for their roles as senior leaders.

One of those lecturers, Dr Andrew Gordon, said in an interview:

"I cheered like crazy at the film of 'The Battle of Britain', like everyone else. But it really is time to put away this enduring myth. To claim that Germany failed to invade in 1940 because of what was done by the phenomenally brave and skilled young men of Fighter Command is hogwash. The Germans stayed away because while the Royal Navy existed they had not a hope in hell of capturing these islands. The Navy had ships in sufficient numbers to have overwhelmed any invasion fleet – the destroyers' speed alone would have swamped the barges by their wash, hardly a need for guns."

As Dr Gordon is a well known naval historian there could be a case for an accusation of bias. However, his counterpart who teaches air warfare history at the same college agrees. Dr Christina Coulter, said:

"While it would be wrong to deny the contribution of Fighter Command, I agree largely with Andrew's perspective that it was the Navy that held the Germans from invading. As the German General Jodl put it, so long as the British Navy existed, an invasion would be to send 'my troops into a mincing machine'."

The myth of "the few" was created through manipulation of the public's perception at the political level. Winston Churchill, being a skilled politician, used the event to show that the Germans could be defeated. He deliberately 'oversold' the battle to boost morale among the populace and try to entice the US into the War.

Long after the battle, countless numbers of historians examined every record of the event to the point that the myth of Fighter Command saving Britain became legend. The release of the movie *The Battle of Britain* then elevated it to fact in the eyes of the public. But it is not fact. Dr Gordon and Dr Coulter's arguments represented a correction to history by putting the event into a proper context.

Of course the air power pundits in the UK cried 'murder' (as they probably will here too). They felt threatened by this correction and attacked the Royal Navy and the historians. Dr Goulter remarked:

"This is an extremely sensitive subject, even today. The Battle of Britain was a formative experience for the RAF – like Waterloo for the army, Trafalgar for the Navy, a sacrosanct event. That is why there is more than a modicum of hostility to any suggestion of re-examining this history. The single-seater fighter pilots of today see themselves as inheriting the mantle of the Few; they especially do get a bit twitchy."

For an island nation like Australia, getting the history correctly interpreted, without emotion, is important in deciding what is needed for our defence.

The Claytons Class – The Destroyer you have when you're not having a Destroyer

If project SEA 4000 was to provide a destroyer for the RAN then technically it has failed. The announcement of the Spanish F-100 as the preferred AWD (Air Warfare Destroyer) design ignores the fact that this is a frigate. The Spanish themselves call it a frigate.

As an FFG replacement it is fantastic, only three hulls short though. But when one looks deeper at the F-100 compared to the Gibbs & Cox Evolved AWD design its frigate pedigree stands out. For example, it is lighter, smaller, has 16 less VLS (Vertical Launch System) cells, it has one less fire control channel, it has one less helicopter, two less close in weapon systems for anti-ship missile defence and little to no allowance or space for major improvements over its life.

In *THE NAVY's* Oct-Dec 2006 issue we published an in-depth analysis on why a fourth AWD was needed. That was written for what was expected to be a fleet of three Evolved AWDs. Now that the F-100 frigate has been chosen, four would be a bare minimum to just equal the capability that would have been provided by the three Evolved AWDs.

Whilst not wishing to sound pessimistic, as this is a major step up for the ADF, a great opportunity has nonetheless been lost. Adding more F-100 frigates to the fleet will however, nullify this issue.

Themistocles

A soon to be familiar sight in Australian waters, three F-100 frigates. (Spanish Navy)

FROM OUR READERS

Dear Editor
I am trying to solicit some help towards two projects of mine. I was hoping to:

a) instigate some interest in the wheelhouse of the old KUTTABUL – I believe the War memorial in Canberra has used the wrong livery, and
b) my long-term search for a final configuration image of HMAS STUART(l), final guise only.

Sadly, I received no reply from the Editors of *Reveille, White Ensign,* and *Navy News.*

My approach to the War Memorial in Canberra returned disagreement on (a) and disinterest on (b).

I have some images that might provide reasonable evidence for (a) but nothing for (b).

Considering the fine record that HMAS STUART gained during WW II I find it odd that there is nothing out there showing how the old fighter looked. Before long there will be little hope of contacting some old sailor who might possess that one useful photo.

Graeme Andrews
164 Glenrock Pde, Koolewong NSW 2256

Dear Sir,
I would like to thank you for your interesting latest issue on the Falklands Conflict with the issues it explored. I recall this war as a lad and have tried to learn about it in more recent years. I liked the revelations of the secret aspects of the conflict in your latest issue, so I just thought I'd pop in a thank you for your efforts.

Like most people I differentiate between a popular war in the Falklands where an ugly junta invader was ejected so free people could live their lives as they saw fit, with today's very unpopular wars in the mid east.

Still, I enjoyed the Falklands issue as one of your best and I wonder if you could answer a question of mine. I can see the wisdom of AEW and the need for it in the Falklands war. The Sea King/searchwater combo was too late to be of use there, but I heard that Westland had already done some design studies on the project before 1982.

By any chance, do you know the year this Westland AEW/Sea King work was looked at?

I surmise the late 70s but I'd be interested to know the exact year as it seems a real lost opportunity as the system could have been a real help there if the design studies started earlier had been carried through.

Robin Tripp
Via E-mail

Dear Robin,
I was able to pass your question on to Cdr David Hobbs, MBE, RN (Rtd), who was the former curator of the RN's Fleet Air Arm Museum. Here's what he had to say:

"Yes, Westlands did some work on an AEW Sea King version in the mid to late 1970s. The project was cancelled because the RAF was expected to provide AEW cover for the Fleet with its Shackletons. The Naval Staff stated that there was no room in an Invincible class carrier for AEW Sea Kings or their people.

The Falklands War proved how wrong the forward planners were and luckily Westland had kept their drawings.

The radar itself was a modified version of the Thorn/EMI Searchwater used in the Nimrod MR2 and luckily they too had retained drawings of the modifications.

That is how the project was able to go from nothing to a flying prototype in 11 weeks."

Dear Editor
I read your last issue on the Falklands Conflict with great interest particularly the 'Secrets Revealed' article by Mr Schweikert. I would like to add a bit more to the article.

It is likely that New Zealand provided more assistance to the Royal Navy during the Falklands Conflict than just the loan of the frigate CANTERBURY. In their book 'The Sinking of the Belgrano' authors Desmond Rice and Arthur Gavshon note that in late April 1982 the nuclear submarine HMS CONQUEROR had a damaged radio mast which was unable to be repaired. This resulted in CONQUEROR "having to route her signals traffic through New Zealand as she headed for her new station between the Falkland Islands and Tierra del Fuego".

If this statement is correct then such signals would have been routed through HMNZS IRIRANGI, the RNZN's communication station in the central North Island. As this incident occurred just prior to the sinking of the Argentine cruiser GENERAL BELGRANO, New Zealand's involvement in the Falkland's Conflict was probably closer than past and present governments have been prepared to admit.

Murray Dear
Hamilton, New Zealand

Dear Editor
You will be interested to know that Australia didn't 'completely' abandon the RN in 1982.

As their training ships went down to the Falklands the RAN ended up taking a number of RN junior officers to sea in HMAS JERVIS BAY as part of their officer training.

Dr David Stevens
Seapower Centre, Canberra ACT

Dear Editor,
As a former member of the crew of HMAS MANOORA (I) during the years 1943–45 I have been deeply interested in the details of the two LHDs to replace HMA Ships MANOORA (II) and KANIMBLA (II) from 2012.

In the Jan – March 2007 Issue of *THE NAVY* in the article on p.7 entitled *'The Fat Ships'* mention was made of criticisms of the naming of the ships. However, no mention was made of the great disappointment of those who served in L.S.I.'s MANOORA, KANIMBLA and WESTRALIA during WW II that names of at least MANOORA and KANIMBLA are NOT being carried on.

These three ships have a unique place in the history of the RAN as the pioneers of amphibious operations in the Navy as part of the USN's 7th Amphibious Force under the command of Rear Admiral Dan Barby. The decision not to carry on these names is all the more puzzling since the new LHDs are consistently referred to as 'amphibious ships'. It also seems to break away from the principles traditionally followed for naming new vessels.

Ken Baldwin
Mt Waverley, Victoria

THE PRESIDENT'S PAGE

The Navy League was established in the United Kingdom in the late 19th century for the specific purpose of promoting a strong Royal Navy. In this role it grew and flourished. At its greatest strength it had 250,000 members. The famous slogan of the early 20th century was "we want eight and we wont wait". The eight of course referred to battleships.

Over many years the League in the United Kingdom continued to argue for a strong and effective navy. Many readers of this magazine may recall the "Navy" magazine. It was published monthly. In many respects it was not unlike our own publication *THE NAVY.*

From very early on, 1910, the League became involved in the Sea Cadets. Support for the Royal Navy and for the Cadets were the joint preoccupations of the League. This arrangement continued and prospered for many years. After World War II the focus became more and more the Cadets. In 1976 the Navy League in the United Kingdom was renamed the Sea Cadet Association since support of the Sea Cadets and the Girls Nautical Training Corps had become its sole aims. The "Navy" magazine ceased publication. A magazine called "Navy International" was produced for some time by a commercial organisation.

It is interesting to compare what happened in Australia. At its foundation in Australia in 1900 the aims of the League here were essentially those of the League in the UK. Support for the RN and in due course the RAN was always important. As was the case in the UK, Cadets came to play an important part in League activities. Indeed, from 1920 to 1973 it would be right to say that the Cadets were the primary focus of the League in Australia.

In 1973 the League in Australia opted to hand over to Navy the responsibility it had had, until that time, of running the Cadets. The primary role of the League in Australia since that time has been to promote the maritime interest and in particular the need for a strong Navy (although its primary focus has shifted, the League continues to support the Cadets with prizes, awards, cash and representations on their behalf).

Thus within the space of two or three years during the 1970s the UK and Australian Leagues diverged completely; one to become solely a cadet orientated organisation, the other to focus primarily on the strength and wellbeing of the Royal Australian Navy.

One consequence of the disappearance of the UK League is that, while there are a number of bodies in the UK that are concerned with defence issues, there now seems to be none which has as its sole or primary purpose the promotion of a strong Royal Navy.

Readers may recall an article published in *THE NAVY* last year entitled "The Terminal Decline of the Royal Navy". It may be too soon to say that the decline is terminal, but it is certainly proceeding apace. At the time the article was published it was believed 14 warships were to be laid up or disposed of. Since then a further six ships have been added to the list. It is thought the RN may be reduced to 19 destroyers and frigates.

On the 17th February this year, the day after a lunchtime discussion between the First Sea Lord and defence correspondents, Sir Jonathon Band was reported as saying "We could turn into the Belgian Navy, and if we do I'm gone". It seems that each long suffering First Sea Lord has agreed to cuts on the basis that the two large aircraft carriers, first promised in 1998, will be ordered. These two ships appear to have acquired the characteristics of a mirage. Always out there in the distance, but they never get any closer.

The United States Naval Institute, in its review of world Navies in the March edition of its magazine, comments on the Royal Navy, "Though belt tightening measures have been under way for years, additional cuts go so deep that many fear an irreversible degradation in capabilities".

What a pity that the Navy League of 1907 is not still about in 2007. It is hard to believe that, faced with such an organisation, the British government would have been able to wreak such destruction.

The situation in Australia is quite different. Ships have continued to be ordered built and delivered for the Royal Australian Navy. The savage cuts to which the Royal Navy has been subjected have not taken place in Australia.

It would be foolish to claim that the continued existence of the League in Australia explains the difference in the treatment the RAN has received as compared with the RN. There are of course many factors at play. We would, however, claim to have done our bit – and every bit helps!

Several years ago the Australian Government announced that the RAN would be acquiring three air warfare destroyers and two large amphibious ships. These announcements were warmly welcomed by the League.

The government has now announced which design has been chosen for both the destroyers and the amphibious ships.

The RAN is to acquire three of the Navantia designed F-100 frigates. The F-100 is already in service with the Spanish Navy.

A ship of the type has already visited Australia. It is a proven design. It will almost certainly be cheaper to build.

The alternative to the Spanish ship was a Gibbs & Cox design based on the USN's Arleigh Burke class. The Arleigh Burke based design is significantly larger. It carries more missile launch cells, it has two helicopters as against one and it has greater range.

The Gibbs & Cox design was just that, a design. Nevertheless it was based on an existing warship. It has been the view of the League that, despite its greater cost, this design with its greater capability, range and room to grow might in the long run prove to be the better option.

However, a decision has now been taken and there is no doubt that the F-100 is a fine proven ship. One benefit of choosing the less expensive ship is that it opens up the possibility of a fourth destroyer. The case for a fourth Air Warfare Destroyer was explained in an earlier edition of *THE NAVY*.

The Navantia design has been chosen for the large amphibious ship. At 27,000-28,000 tons these ships will be the largest the RAN has ever operated. They represent a real upgrade in capability.

The question of where to build the two amphibious ships is interesting. It is a question the League addressed in its submission last year to a Senate Committee inquiring into naval shipbuilding.

> *"In the event that a yard cannot be found able to construct ships of such size in Australia then the procedure the League would recommend in such circumstances would be to have the hulls built overseas with the fitout including radars, combat systems, communications etc carried out in Australia".*

The outcome is much as suggested by the League in its submission. The hulls will be built overseas, but in making the announcement the Prime Minister stated that the superstructure and fitout will be completed by Tenix in Melbourne.

The government announcement confirmed that ASC in Adelaide was to be the builder of the destroyers. While ASC will conduct the final assembly of the destroyers some 70% of the ship modules will be built at other shipbuilding sites around Australia.

The League welcomes the Government's announcement. This will result in a greatly enhanced capability for the RAN. It will also be of great benefit to naval shipbuilding in Australia.

We hope that this announcement will be speedily followed by the placing of orders and the execution of contracts.

Mr Graham Harris
Federal President, Navy League of Australia

‘THE BATTLE OF BRITAIN’
A Sea Power Victory

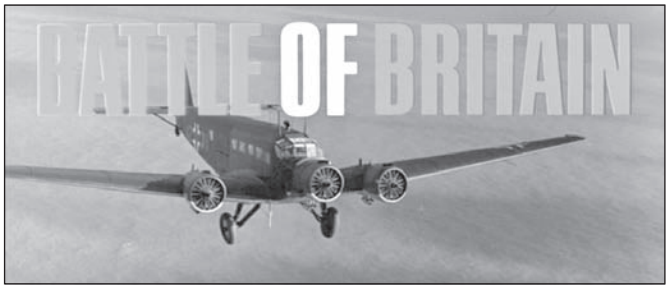
By Commander David Hobbs MBE, RN, (Rtd)

A great storm blew up in the UK in late August 2006, as the 66th anniversary of the Battle of Britain approached. A number of prominent academics stirred up a hotly contested debate by suggesting that it was the Royal Navy which really prevented an invasion by Hitler’s troops rather than the Royal Air Force. Regular contributor to THE NAVY, Commander David Hobbs MBE, RN, argues that while the RAF inflicted a tactical defeat on the Luftwaffe for the first time after its successes in Poland, Norway, the Low Countries and France, it was the Royal Navy that prevented a sea-borne invasion from taking place.

Sixty-seven years after it was fought, the ‘Battle of Britain’ remains controversial. In many parts of the world (including Australia) it is seen as a ‘life-or-death’ struggle in which a small number of fighter pilots blocked Hitler’s planned invasion; in Germany, it was reported recently that some of the Luftwaffe airmen who took part had dismissed it as an unimportant series of actions. There is still debate as to when it started, when it finished and whether it was a great victory at all. Much of the debate has, however, tended to ignore the central role of the Royal Navy in making any Nazi invasion of Britain impossible.

Following its rapid successes in the west, the German war machine took time to digest the fall of France and Hitler’s Directive 16, which ordered the planning for an assault on Britain to be commenced. The Directive was not promulgated until 16 July 1940, weeks after the last British soldier had been evacuated from the continent of Europe. It was a naïve document that failed to take account of the crippling losses of surface ships suffered by the German Navy in the Norwegian Campaign. By contrast the Royal Navy suffered no significant losses.

Directive 16 ordered the Army to land on a broad front from Ramsgate to a point west of the Isle of Wight with the Luftwaffe doing the work of artillery and the Navy the work of engineers. The document listed five conditions which needed to be fulfilled before an invasion could be undertaken:

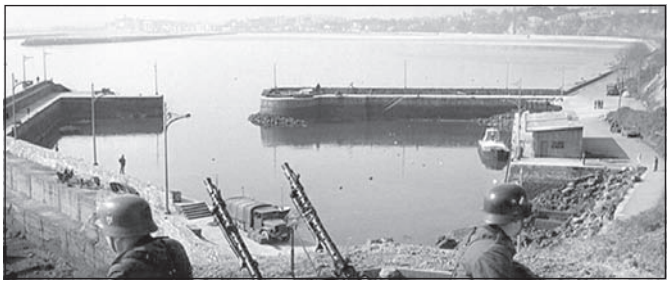


A screen capture from the start of the MGM movie ‘The Battle of Britain’. The excellent cinematography, access to period aircraft, an outstanding cast and fine acting have been quintessential in the myth and legend building surrounding the air battle. Only now is the battle being placed into the proper context. (MGM)

- the RAF had to be eliminated,
- the routes through the English Channel had to be cleared of mines,
- both flanks of the crossing had to be heavily mined to keep British warships away,
- heavy guns on the French coast were to “dominate the areas”, and
- the British Home and Mediterranean Fleets were to be “pinned down”.

Over two million tons of shipping was required by the Germans to land the 300,000 men and their equipment that the Army assessed it needed for the initial invasion, but after a

The decisive weapon of the air component of ‘The Battle of Britain’, the Hawker Hurricane. The myth building surrounding ‘The Battle of Britain’ has the Spitfire as the hero when it was the Hurricane that was available in larger numbers due to her ease of build, scored the most kills and was easier to repair.



Three screen captures from the MGM movie 'The Battle of Britain'. The top image from the start of the air battle in the movie shows German troops being issued life vests for the commencement of Operation Sea Lion, the sea borne invasion of England. The second shows a crowded French harbour packed with barges to take the troops across the channel. The last image is from the end of the movie and is intended to portray the reality of the RAF stopping Operation Sea Lion as the French harbour is now devoid of all craft. (MGM)

year of blockade by the Royal Navy, Germany simply did not have that number of vessels. It is to the planners' credit that they managed to gather 750,000 tons of merchant ships and Rhine River barges to potentially carry a reduced force across the English Channel but they lacked the warships to defend them. The barges' low freeboard also made bad weather a potential enemy through swamping of the heavily laden craft.

By July 1940 the operational German fleet amounted to four cruisers, eight destroyers and twenty-six U-boats at immediate readiness for action. The assembly of barges and merchant vessels in ports far away from their normal tasks had a crippling effect on German industry and they could not be held waiting indefinitely. By 21 July Grand Admiral Raeder, Commander-in-Chief of the German Navy had to admit to Hitler that he could not protect the crossing against interception by British warships.

At the same time the German shore-based heavy calibre long-range guns failed to dominate the proposed area of operations. In fact, the British guns at Dover had more success in returning fire. Attempts to sweep British mines were defeated by the Royal Navy's control of the English Channel right up to the enemy coast.

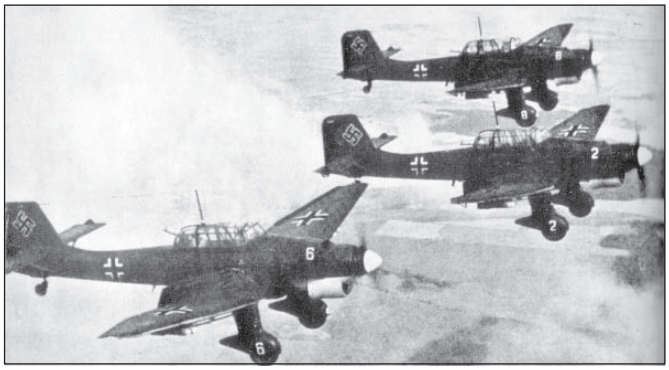
The last condition requiring the British fleets to be "pinned down" was never a viable operational aim and showed that the author of Directive 16 had no knowledge of naval warfare. Every night hundreds, out of a total force of close to 1,000, patrol vessels searched the Channel backed by destroyers. Further destroyers, withdrawn from Western Approaches Command, stood ready to reinforce them. Cruisers moved south from the Home Fleet and, from August 1940, the battleship HMS REVENGE waited at Plymouth ready for immediate action. The battleships RODNEY, NELSON and five other capital ships also stood in wait. Any claim that German aircraft could stop the warships from annihilating a German invasion fleet does not stand up to scrutiny since the Luftwaffe had already proved unable to stop British warships and even the 'little ships' from withdrawing the British Expeditionary Force (BEF) from Dunkirk in daylight during fine weather.

Up to that point only two warships had been sunk by air attack in the war. These were the British destroyer GURKHA on 9 April 1940 and the German cruiser KONIGSBERG sunk by Royal Navy Skua dive bombers on 10 April 1940. Between the wars, several significant warships, including the surrendered German battleship OSTFRIESLAND, had been sunk in bombing trials but they were stationary, unmanned and had no anti-aircraft defences and no damage control parties. Even in this state, they were not easy to sink and an active unit of the Royal Navy would not be so accommodating.

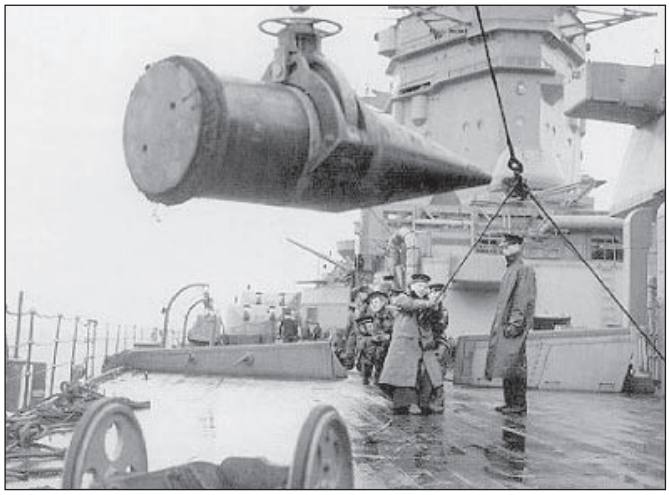
The German invasion force was not ready until September and by then much of the slow Channel crossing would have to be carried out in the dark when German aircraft could hardly locate British warships, let alone attack them effectively. At no time in 1940 did Luftwaffe aircraft prevent British convoys from sailing through the Straits of Dover. To further emphasise that air-power could not have been a decisive factor, in May 1941 British destroyers completely defeated German attempts to land troops in Crete by sea, despite a complete lack of allied air cover and consequent heavy casualties. Neither did unopposed attacks by the Luftwaffe prevent the Royal Navy from withdrawing Commonwealth troops from Crete when it fell to forces dropped by parachute.

The Luftwaffe of the time was primarily designed to support the army in its 'Blitzkrieg' (Lighting War) tactic. When it was required to potentially conduct anti-shipping operations it found its pilots did not possess the skills and lacked the appropriate armour-piercing bombs needed to attack Royal Navy capital ships.

Throughout the period referred to as the 'Battle of Britain' the Royal Navy maintained in the threatened area three battleships, five cruisers, forty-five destroyers and about 1,000 motor torpedo boats, patrol craft, minesweepers and armed trawlers. Within hours they could be reinforced by the balance of the destroyers in the Western Approaches Command based at Plymouth and by ships of the Home Fleet. In modern terms, the Germans needed 'battlefield dominance' to defeat Britain



Three Luftwaffe Ju-87 Stukas. Planes like the Stuka were designed to provide the army with an airborne artillery capability to conduct 'Blitzkrieg'. When presented with the prospect of attacking warships the Luftwaffe was found to lack the necessary skills and weapons for the task.



A 16-inch armour piercing shell being loaded onto the RN battleship HMS RODNEY. The German Navy had nothing close to this sort of firepower in 1940.

in the autumn of 1940 and if she was to deploy an invading army, that battlefield was the English Channel.

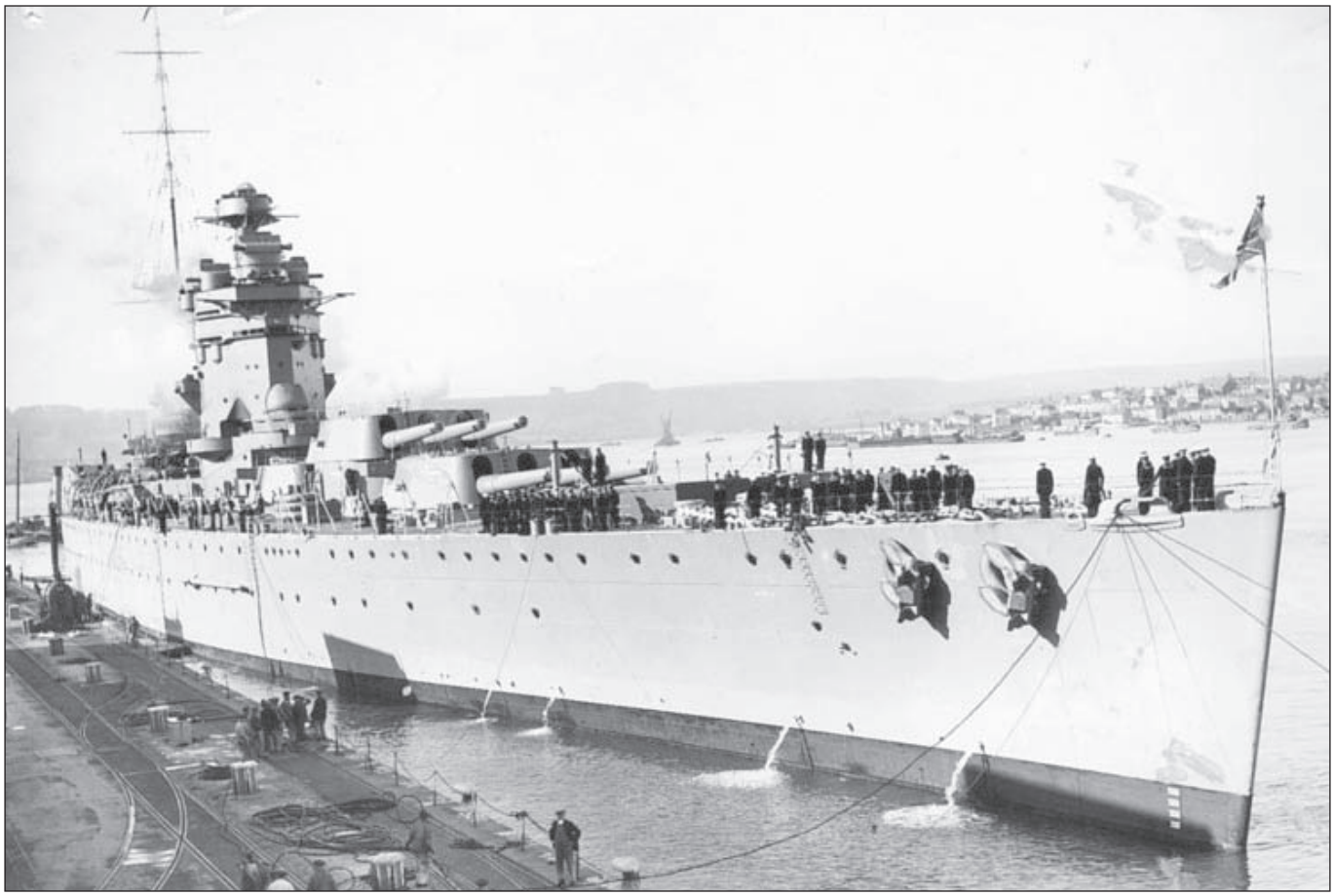
To reach Britain across it she would have to defeat the world's most powerful Navy fighting in defence of its homeland. Germany did not and could not have battlefield dominance. Hitler had been defeated, as so many would-be invaders had before, on the shore of continental Europe by the Royal Navy yet she still saw herself on the brink of victory. Poland, Norway, Denmark, Holland, Belgium and France had all succumbed only days or weeks after being attacked. The withdrawal of the BEF from France marked, in Nazi eyes, the end of Britain's ability to resist and it seemed probable to Hitler that Britain would consider its position and sue for peace.

That Britain did not was due to a number of factors, among them Winston Churchill's inspiring speeches, public acceptance of the 'rightness' of the nation's cause and the loyal support of the Dominions. There was confidence, too, in the ability of the Navy to control the sea approaches and growing confidence in the ability of the RAF to limit the enemy's ability to bombard the country from the air.

Viewed against this background, the Luftwaffe's switch from attacks on military targets to attacks on London and other cities can be seen not as an arrogant mistake, but as an attempt to increase the possibility of civil unrest that would undermine the government.

With the German failure to challenge the strength of the Royal Navy, the 'Battle of Britain' has come to be thought of over time as nothing more than an air battle. This is regrettable as it diverts just attention from the vital parts played by so many other participants in Britain's defence.

Air operations were important, of course, and a number of important roles were undertaken by the Royal Navy's Fleet Air Arm. These included the land-based air defence of the Home Fleet base at Scapa Flow in the Orkney Islands by 804 and 808 Naval Air Squadrons (NAS), under the control of RAF Fighter Command, since the RAF had insufficient squadrons to carry out the task. Swordfish aircraft of 812, 818 and 825 NAS, with Albacores of 826 and 829 NAS were attached to RAF Coastal Command and operated from RAF stations. They carried out a wide variety of missions, many of which had not been foreseen when the aircrew were trained. They included mine-laying in enemy harbours, known as 'gardening', convoy escort, anti-submarine patrols, coastal reconnaissance, bombardment spotting for warships engaging shore targets, night bombing raids on enemy targets inland, dive-bombing



The RN battleship HMS RODNEY. RODNEY and her sister ship NELSON were the most powerful battleships in the European theatre during 1940. They were placed on standby during 'The Battle of Britain' to repel a possible German invasion and could have appeared in the English Channel very quickly to wreak havoc on the undefended German invasion fleet. Their hulls and topsides would have been impervious to Luftwaffe bombs as they were not armour piercing.

enemy troop concentrations and vehicles, attacks on small enemy warships and inshore craft, photo-reconnaissance and reinforcement of the Navy's anti-invasion security patrols. Other squadrons were, for short periods, attached to Bomber Command and used to attack invasion shipping concentrated at Brest on the French coast. In addition to the squadrons placed under RAF control, the RAF Staff History 'Air Defence of Great Britain' states that the Admiralty lent 58 RN pilots to RAF fighter squadrons as replacement aircrew. They earned no small distinction and gained a number of aerial victories. Eighteen of them were killed in action, a higher percentage than most other identifiable groups within Fighter Command.

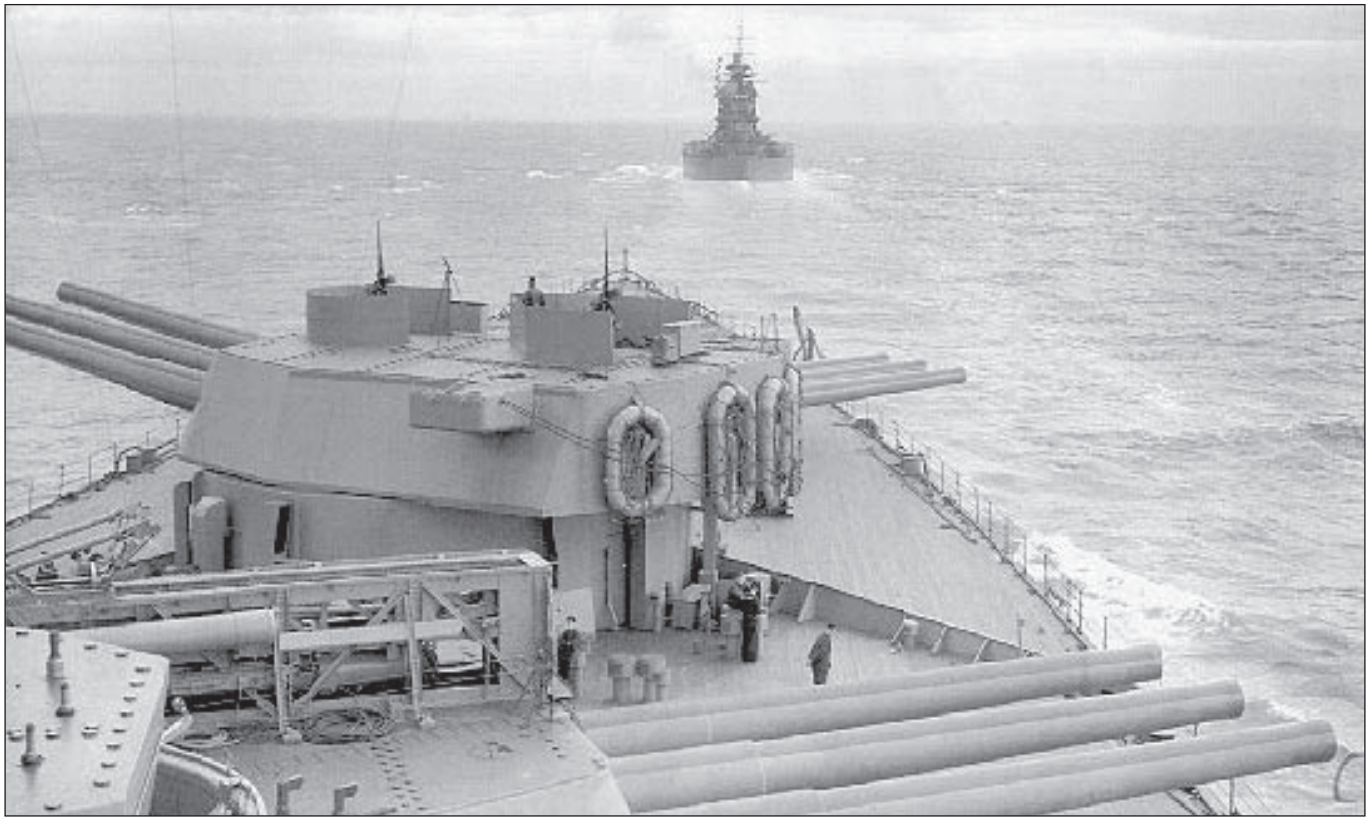
Taking a wider view, the whole British nation can take credit for not cracking under the heaviest air bombardment ever mounted up to that time. Arguably everyone was in the 'front-line', even civilians who went about their business with courage and dignity, defeating the German attempt to force a political surrender as surely as the armed forces defeated any thought of subduing the nation by force.

The British Army, despite losing much of its equipment in France, maintained a field force in being that was sufficiently large to oblige the Germans to land in strength, helping to make their problem of mounting a seaborne invasion impossible.

By the autumn of 1940 the army had been able to rebuild much of its lost equipment stocks. Over 500,000 rifles had arrived from North America in July. By September the army had 500 anti-tank guns compared to 170 before the battle. They also had 350 medium tanks and 500 light tanks compared to 80 and 170 respectively.

The RAF, by continuing to oppose the Luftwaffe, inflicted the first defeat on a force that had until then gained a reputation for invincibility, but that was not what stopped an invasion. In the summer and autumn of 1940, the Royal Navy stood ready to defeat any attempt at sea-borne invasion by the Germans. Its ability to do so was so manifest that the enemy never even tried. Sadly, that awesome capability has been largely forgotten by the nation that created it. The 'laurels' of victory should go not just to a handful of fighter pilots but to all those who fought for the cause of freedom against a brutal and totalitarian aggressor and, hopefully, it may not be too late to see a less myopic view of events in 1940 adopted.

The British Prime Minister Winston Churchill. His now famous speech about "the few" had six lines of text devoted to Fighter Command's effort during 'The Battle of Britain'. However, 22 lines were devoted to Bomber Command. As a skilful politician he later used the victory as a propaganda tool and made more of it than it was in order to boost morale and entice the US to join the war.



The battleships RODNEY and NELSON at sea (as seen from RODNEY). These were the "Captains of the Gate" as Prime Minister Churchill referred to them as in their role of preventing a German invasion. Each was armed with nine 16-inch guns, twelve 6-inch guns, eight 4.7-inch AA guns, sixteen 40mm AA guns and 28 x 2 pdr. Pompoms. They were also backed up by another battleship, five cruisers, 45 destroyers and about 1,000 motor torpedo boats and patrol craft.

The AWDs and Our Real Frontier

The 55,000 tonne former Soviet aircraft carrier VARYAG seen here nearing completion of her reactivation in a Chinese Navy Shipyard. She is expected to put to sea sometime next year.

By Rear Admiral Andrew Robertson AO, DSC, RAN (Rtd)
Federal Vice-President Navy League of Australia

In 1964 in his treatise 'A New Model at Sea' the English Marquess of Halifax had this to say:

"To the question, 'What shall we do to be saved in this world?' there is no answer but this, – Look to your moat."

For an island nation like Australia our real frontier is indeed the oceans around us – our moat – and there is much wisdom in the observation of the noble Marquess.

Since the end of the Cold War, the need for naval power has received little emphasis or attention in our corridors of power. The USN has reigned supreme on the oceans wherever America has chosen to deploy its strength, and Australia has basked under the protection of our great ally.

But does this lead to complacency and a failure to look to the long-term future? Navies, due to their technological complexity and the huge range of equipments needed including many types of ships, submarines, aircraft, weapons, engines and communications and detection systems, take much time and great effort and training to develop. Decisions on future construction must therefore be taken many years before threats are seen to emerge.

Ships also remain in service for several decades: the projected new Air Warfare Destroyers (AWDs) and Landing Ships will be in service for 30 to 40 years. Given the great changes in the strategic background in weapons, technology, and threats seen over the last 40 years, clearly major changes are certain in coming decades. This then points to the desirability of selecting designs for these ships which give the greatest flexibility for future modification to be able to fit new weapons and systems which may be required during the long lifetimes of these vessels.

And what of maritime developments in our general area? According to that much-respected journal *Janes Fighting Ships,* several nations in East and South Asia are in the process of building powerful blue-water Navies. Some already have major industrial support bases and large merchant fleets.

From the statements of Chinese leaders and the evidence of their naval construction programme there seems little doubt that China plans to develop into a major naval power.

According to *Janes,* the present strength of the PLA-N (Chinese Navy) includes two ballistic missile-armed nuclear-powered submarines, six nuclear-powered attack submarines, about 48 conventional submarines, 26 destroyers and 44 frigates. China's major building programme includes numerous submarines and amphibious ships and the introduction of her first aircraft carrier, the ex-Russian VARYAG. New destroyers include four of the latest powerful Russian Sovremenny class. The naval air force now comprises about 800 aircraft and modern Russian Su-30 series fighters are being purchased, almost certainly for the VARYAG.

The Indian Navy, although it has suffered some delays in its building programme, is developing into a formidable force based around aircraft carriers. Its current strength includes one aircraft carrier (VIRAAT), 16 conventional submarines, eight destroyers, 38 frigates and corvettes and landing ships and tankers. The construction programme includes the modernisation of the ex-Russian aircraft carrier ADMIRAL GORSHKOV (now the VIKRAMADITYA) in Russia and a further aircraft carrier being built in India.

One or two new nuclear-powered submarines are to be leased from Russia, while one nuclear submarine is being built

in India. At least six Scorpere class submarines are to be built in India along with about 12 destroyers, frigates and corvettes.

As Japan takes a more assertive role in world affairs, much attention is being given to its Maritime Self Defence Force (MSDF) (Japanese Navy). The MSDF is evolving from a purely defensive Navy to a more flexible force capable of reacting to developments away from home. Its current strength includes 15 submarines, 44 destroyers, nine frigates, and many support ships. Vessels to be built include two helicopter destroyers (virtually small aircraft carriers) and four submarines.

Modernisation of the Russian Navy, particularly its large submarine force, an important proportion of which is based in the NW Pacific, continues steadily. There has been a 200 percent increase in overall military expenditure in Russia since 2001 and Russia has become increasingly authoritarian and assertive over recent months as relations with the West, and the USA in particular, have deteriorated.

Australia has worked hard and with success to form friendships with all these nations and this should continue. But no-one can foretell what the future holds in relationships both between these powers, and with major world players, especially the USA. What really matters to our national security would seem to be the capability of the maritime forces being developed by these nations, and not the perceived intentions today of the countries concerned.

While current Australian defence activities are necessarily dictated by comparatively short term (one hopes) involvements in Timor, the Solomons, Iraq and Afghanistan, it would seem important that the long-term defence of Australia itself should not be overlooked.

Since the non-replacement in 1982 of Australia's Carrier Task Force centred around the aircraft carrier HMAS MELBOURNE, the RAN has fallen greatly in strength compared with that of other Navies in our general area. Successive governments since WW II have followed a policy of merely replacing (except for the aircraft carrier) major naval units and not expanding the Navy.

For example the three Tribal class destroyers built in WW II were replaced by two Battle class which were replaced by three Daring class destroyers. These intern were replaced by three Guided Missile Destroyers (DDGs) and now the proposal, involving a time gap of over a decade, is to replace the past DDGs with 'at least' three Air Warfare Destroyers.

This replacement policy has been despite the gradual deterioration in our long-term security following the withdrawal of the British from East of Suez (including Singapore), the withdrawal of the Americans from the Philippines, and now the partial US withdrawal from Okinawa. This policy has continued despite acknowledgement of the need for two-ocean basing with the building of the naval base at Cockburn Sound WA and the clear future need for strong naval forces to be able to operate off both major coasts at the same time.

Reason would seem to indicate the wisdom of ordering initially at least four of the projected Air Warfare Destroyers and selecting a most flexible design with maximum compatibility with USN ships and equipments.

However, an increase in future naval strength should not be at the expense of the Air Force and the Army, for all three services have vital roles to play in the defence of the nation, including its maritime defence.

Though Australia is not yet threatened with the possibility of major attack, an increase in the percentage of GDP to be spent on defence would seem to be in the long term national interest of this island nation.

In years to come our main ally, the USA, may no longer be the only super power. Though we can hope that our general area will remain stable, we should look to our moat – now.

Three JMSDF (Japanese Maritime Self Defense Force) destroyers at sea. From left to right, the helicopter carrying destroyer HIEI; the AEGIS equipped air warfare destroyer CHOKAI and the destroyer ASAKAZE. The JMSDF is once again a powerful and professional Navy. (USN)

THE 2007 ANNUAL CRESWELL ORATION

FEDERATION AND THE EARLY AUSTRALIAN NAVY

Address given by Commodore Ray Griggs, CSC, RAN
Deputy Fleet Commander

1 March 2007 is the 106th anniversary of the formation of Australia's Navy. The title of the force, whether it be the Commonwealth Naval Forces as it was between 1901 and 1911, the Royal Australian Navy as it is today, or some future title should this country ever become a republic, is largely irrelevant. What is important is that the 1st of March will always be the day that our national Navy was formed. This year is probably one of the most high profile celebrations of Navy's birthday that we have seen. The morning saw a series of BBQ breakfasts around the country with national television coverage on the Today show of the breakfast event in Sydney attended by 500 people at the RAN Heritage Centre on Garden Island, closer to Melbourne over 900 members of the ships company of HMAS CERBERUS participated in a similar function.

On the evening of 1 March there was also a reception onboard HMAS SYDNEY at Garden Island to mark the occasion. Last year our ships were dressed overall for the first time on the 1st of March, as you all know dressing ship is a very public acknowledgment of a special occasion; this year is the second such occasion we dressed ship and I think it is here to stay. So, as you can see we have got over our initial reluctance to acknowledge the importance of this day and I believe that it is now becoming appropriately entrenched as a key commemorative date in Navy's calendar. It is an important opportunity to project the Navy into the public consciousness, for our people to reflect on the organisation they are a part of, the importance of the job they do, and importantly, to reflect on all those who have served in Australia's Navy over the last 106 years and helped to make it what it is.

(From left to right) Mr John Wilkins, President of the Victorian Division of the Navy League of Australia and CDRE Ray Griggs, CSC, RAN at the 2007 Annual Creswell Oration hosted by the Navy League of Australia.

The broader question of why it took over 100 years to really embrace the concept of celebrating 'our birthday' is a very hard one to answer. I thought Commodore Jim Dixon did an excellent job in the 2001 Creswell Oration when he pointed to a number of factors. He spoke of our tradition as the silent service, of doing our business in private. He also spoke of the impact of our Royal Navy heritage and of the public confusion that was engendered when the Navy celebrated the 75th anniversary of becoming the Royal Australian Navy in 1986.

For me the most influential is our Royal Navy heritage and the attendant cultural reticence to celebrate these types of events. In preparing for today I have been looking to see if there is a single date that the Royal Navy celebrates its 'birth'. I have not been able to find one, in fact even finding a year to mark the 'birth' of the RN is difficult. There appears to be some debate whether it is 1509 when Henry VII ascended the throne and developed the Navy Royal or 1660 when Charles II instituted his fleet of over 1500 ships and developed what is more recognisable as the Royal Navy. The point I am trying to reinforce here is that there is no real tradition of celebrating the RN's birthday, so as a Navy we have not had this tradition either and have only recently adopted the practice. Even in the United States, where celebration of service birthdays is a more elaborate affair, there was confusion over marking the Navy's birthday that was only resolved as recently as 1975 by the CNO of the day Admiral Zumwalt. From 1922 until 1975 it was the Navy League, and the irony of that is not lost on me, that drove the Navy's commemorative date when it established Navy Day. The date chosen was October 23, in honour of the Navy loving President Teddy Roosevelt. Admiral Zumwalt established the Navy's birthday as October 13th to commemorate the day that the US congress appropriated funds to build the first two US warships. So while we have a tendency to berate ourselves for not having embraced our Navy's birthday – we were clearly not alone. Importantly though, through the efforts of the Navy League and now the RAN itself – I think we are celebrating the importance of the day in an appropriate way.

In celebrating the Australian Navy we also celebrate the architects of that achievement and their subsequent efforts to give Australia's Navy both substance and significance. Being

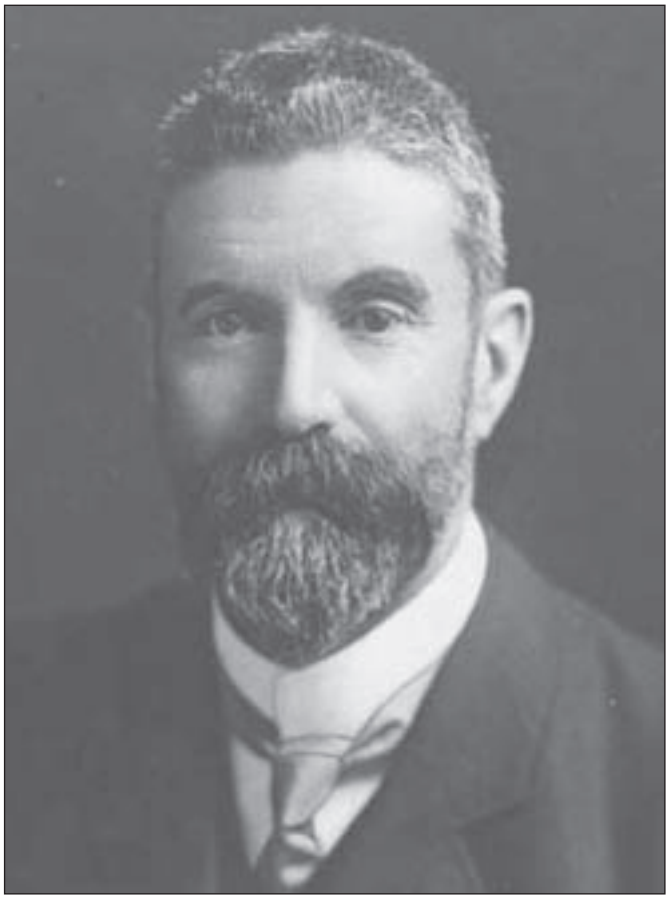
the 7th speaker delivering this address which focuses on a relatively small but important period of our history, it is difficult to present a new perspective on the early history of the Australian Navy. Even more difficult is to provide a fresh perspective on the key architects who helped establish Australia's Navy and in particular on Vice Admiral William Rooke Creswell. Given the thorough coverage provided by the speakers over the last six years, I thought today that I would spend a little time on some of the events that led to the formation of the Commonwealth Naval Forces in 1901 and in particular place those events into the broader context of the journey towards Federation. In doing so I hope to pay tribute to Creswell, Collins and others by outlining the challenging environment within which they shaped the development of our Navy.

Federation as an outcome was of course neither inevitable nor a smooth process. The motives of all concerned during the lead up to Federation are continually examined and revised by each subsequent wave of historians. There is still debate over whether Federation actually delivered a nation or simply a slightly different type of dependency. It is interesting to see how the issue of naval defence and the role of the RN has been used as some sort of litmus test over what Federation delivered. If, as some allege, Australia's continuing dependence on Britain is exemplified by our dependence on the RN, why did our early statesmen go to so much effort and expense to craft an independent Navy, a pursuit that was for so long against the Admiralty's wishes.

Defence, and how best to provide it, was an issue of as intense debate as any other aspect of the day. In that debate the naval dimension was pre-eminent given the recognition of the importance of maritime trade and what we would today describe as the protection of sea lines of communication. The regional strategic picture in the 1890s, like it is today, was one of great uncertainty. European imperial powers were active in South East Asia (France, Netherlands and the Spain) and the South Pacific (Germany) and both Russian and Japanese naval activity was on the rise. Britannia still firmly ruled the waves but, whether this made Australians feel secure at the far flung reaches of the empire is less certain. As the RAN's historian David Stevens points out, the waters of the Pacific and Indian Oceans were viewed by those in Australia as the waters that would become the scenes of future struggles for maritime and hence commercial supremacy.

By the time of Federation there had been colonial Navies of various shapes and sizes for 25 years or so. They were of course focused on local defence and had evolved in a variety of different ways. Victoria for example had a sizeable force designed to deal with the defence of Port Philip and its environs whereas New South Wales tended to rest on the protection of the British warships based in Sydney and in many ways was largely indifferent to colonial naval defence. Some of the colonial Navy development was spurred on by the poor state of the Royal Navy's Australian Squadron and over concerns of a potential war between Britain and Russia in the late 1870s.

The journey towards a national Navy really starts with the arrival in Australia in 1884 of Rear Admiral George Tyron, RN, the first Flag Officer and Commander in Chief of the Australian Station. His aim, under the guidance of the First Sea Lord, Admiral Sir Astley Cooper Key was to try and increase the load that the colonies took in providing for their own defence. Tyron's plan was to develop a squadron of ships

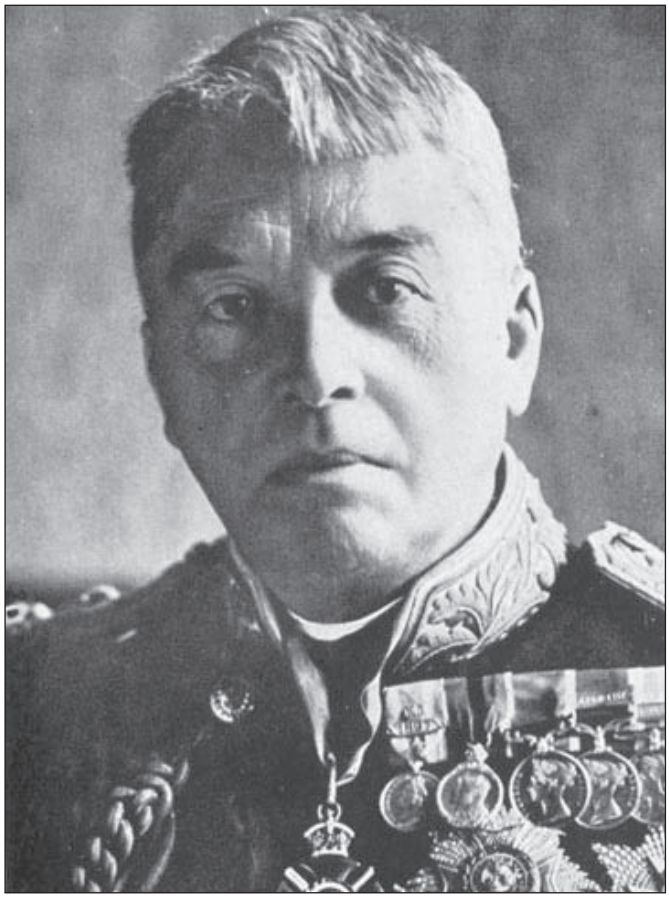


Prime Minister Alfred Deakin. His Nationalist stance would see him support Creswell's arguments for a Navy.

that was effectively tied to Australian waters and largely under colonial control. He did not succeed in achieving this plan but did raise the level of awareness of the issue of colonial contribution to naval defence. Among the reasons for not being able to conclude his plan were concerns regarding the ability to keep such a squadron efficient and trained and jurisdictional issues such as the status of the crews in relation to discipline.

The colonies position regarding naval defence at the time was best summed up following the inter-colonial conference held in Sydney in 1881. While the need for the provision of coastal and port defence was conceded, naval defence was seen to have large imperial interests and therefore 'should continue to be at the exclusive charge of Imperial Government and that the strength of the Australian Squadron should be increased'. The colonial conference of 1887, attended by Alfred Deakin and Admiral Tyron, resulted in the Australasian Naval Defence Act and the creation of what was to be known as the Auxiliary Squadron of five fast cruisers and two torpedo gunboats. The ships were funded largely by the imperial government, were under the control of the Commander in Chief of the Australian Station but had to remain on that station. These ships arrived in Australia in 1891, a month after the first national Australasian Convention where Sir Henry Parkes moved a motion that the military and naval defence of Australasia shall be entrusted to Federal forces, under one command. Parkes amplified this to mean that the naval officer in command shall be a Federal officer and amenable to the national government of Australasia. So as early as 1891 it was clear what Australians felt the form of naval control should look like.

Any impetus to further develop colonial naval forces seemed to wane through the 1890s, particularly following the



First Sea Lord Jackie Fisher. His notion of organising the fleet in smaller 'tactical units' was a neat fit with Creswell's plan.

economic downturn of 1892–3. The British position throughout this period can be characterised as expecting the colonies to contribute to their defence through a system of subsidies to support the operations of the RN. One Empire, one sea, one fleet was the mantra – in many ways this simplified the Admiralty's lot, it gave them maximum strategic flexibility in the stationing of forces and minimised potential jurisdictional issues with local colonial Navies. This view was reinforced at the 1897 colonial conference and carried forward into Federation. Defence was a rub point between two ideological positions that formed prior to and during the early days of Federation. The imperialists, or colonialists, as they were sometimes known were quite content with this arrangement with the Admiralty, but to those with more nationalist leanings, subsidies and subordination of Australia's broader naval defence to the British was a matter of national pride. It was this group that formed the basis of those pursuing an Australian owned, built and crewed naval force.

By federation and the creation of the Commonwealth Naval Forces on this day 106 years ago, the material state of the former colonial Navies was poor. For the rest of the decade the primary task of the leadership of the CNF was not operationally focused, particularly as there was so little capability to actually employ. The main task facing the leadership was trying to get agreement on the role of an Australian Navy, deciding on an appropriate force structure and working out how the fleet would be manned, trained, controlled and supported. These days we would call this the raise, train and sustain function. The advantage today of course is that there is at least an accepted role for the RAN. For the likes of Creswell, Collins, Clarkson there was not and for a number of years there was active intervention from the Admiralty to prevent something like the RAN as we know it even from forming.

In the early days of the CNF the former colonial forces effectively continued to operate as independent entities. Notwithstanding the excellent early work of Collins, it was not until the end of 1904 when Creswell was appointed as the first Director of Naval Forces that the bureaucratic machinery required to coherently manage the CNF started to be put in place. When he took up the position Creswell had extensive experience in both the Royal and colonial Navies. He had served in a number of theatres and seen active service on the China Station and while conducting anti slavery operations in Africa. His experience in the colonial Navies positioned him well to deal with government and to be the effective advocate that he was. He was not seduced by simply trying to acquire ships and was always conscious of the importance of developing naval infrastructure so that whatever force was acquired could be sustained.

With Creswell less than six months into his job, Admiral Togo crushed the Russian fleet at the Battle of Tsushima, this event combined with the increasing tensions between Britain and Germany led to an important shift in the strategic balance in the Pacific. There was a serious concern in Australia about this shift, partly brought about by the White Australia Policy and perceived Japanese opposition to it, and partly by what some considered was a too cosy alliance between Britain and Japan which manifested in a reduction in the number of British ships in the Far East. Creswell did not waste time in putting forward his first serious proposal for an Australian squadron. His June 1905 proposal for 3 cruiser destroyers, sixteen torpedo boat destroyers and thirteen torpedo boats was ambitious. He reinforced his plan in his first Annual report to Parliament in January 1906. In that document he provided an excellent articulation of what his proposed force could achieve and reinforced the economic effects of not having a viable Navy. In Prime Minister Deakin, Creswell had an ally, particularly noting the strategic circumstances of the day and Deakin's own nationalist streak which inevitably pushed him towards Creswell's arguments. According to Bob Birrell in his book *'Federation: The Secret Story',* one of Deakin's main aims was to increase Australia's influence in the imperial policy arena. While Deakin believed in the empire, he saw the role of dominions such as Australia to be one of equals with Britain particularly when it came to matters of imperial decision making. Birrell contends that Deakin saw the issue of an Australian Navy as a bargaining tool to increase Australian influence in imperial policy making.

After the rise of Japanese sea power the issue of a Navy became something of a rallying point for the nationalist cause and fitted very neatly into Deakin's 'Australia for the Australians' slogan of the 1906 election campaign. There was however, still some reluctance in government to fully embrace Creswell's plan and the then Defence Minister Senator Playford put four searching (and fairly tactical) questions to Creswell regarding the overall viability of a destroyer defence plan. It was clear from the nature of the questions that Playford was more of a continentalist but Creswell clearly convinced him of the worth of the plan as he sent Creswell to Britain in 1906 to gather more information on the working of torpedo boat flotillas and to expose the Admiralty and the Committee of Imperial Defence to his plan.

From the reforming First Sea Lord Admiral Jackie Fisher, Creswell got a receptive ear. Fisher's notion of organising the

fleet in smaller 'tactical units' was a neat fit with Creswell's plan. From the Committee of Imperial Defence however, what he got was more like an earful! The committee advised Creswell that it had not recommended the adoption of any form of local naval defence. This in concert with opposition from the Colonial and Foreign Office prevented any forward motion on the issue. In May 1906 the Committee reported on Creswell's plan for local defence and concluded "that the protection of Australian floating trade…demands for its effective accomplishment requires the closely concerted action of powerful sea going ships. Localised vessels of the destroyer type could play no effective part in securing this object. There is therefore no strategical justification for the creation at great expense of a local force of destroyers – a type of vessel designed for totally different uses".

Despite this Creswell modified his original plan several times over the next three years and in 1908 Prime Minister Deakin set aside 250,000 pounds for harbour and coastal defence. His successor Andrew Fisher continued with the push towards an Australian Navy and announced a three year scheme based upon the acquisition of 23 destroyers. Tenders were called for the first three ships in early 1909.

In 1909 there was what became known as the naval scare when concern over the rate of German naval modernisation reached the level of general concern in the British Parliament. Across the dominions a wave of patriotic meetings generated appeals for financial assistance for Britain's Dreadnaught program. The important thing for Australia's Navy was not the public reaction to this but how the dreadnaught became the centre piece of what became known as the 'Fleet Units' which eventually became the basic unit of force structure of the early RAN. The key change was the shift in the Admiralty's position in relation to colonial or dominion naval forces. It is interesting, but not particularly fruitful, to speculate what the RAN fleet would have looked like without this shift in attitude. One thing can be sure is that the dominion government would have continued to have Creswell making his case. That said Creswell was not convinced that the 'Fleet Unit' was what Australia needed and stuck to his guns continuing to argue for destroyers and infrastructure although eventually the fleet unit was accepted. The huge task of setting up the CNF for the introduction of the Fleet Unit began which culminated in the arrival of the Fleet in Sydney on October 4th 1913.

It is critical that we do not romanticise our reflections on the past. Creswell did not single handedly create the RAN. He does however, deserve our enduring thanks. I don't believe that his greatest achievement was the arrival of the fleet in 1913 or the fact that he spent 14 years in the top job. While these are all remarkable feats in their own right. For mine his greatest achievement was ensuring that the early Navy was set up in such a way that it could be sustained and grown as the strategic situation demanded.

I hope that the Navy League continues to sponsor this event, this is a story that deserves to be told again and again. I will leave you with a quote from Prime Minister Joseph Cook made on the arrival of the Fleet in 1913. His words are as poignant today as when they were first spoken. He said:

"The Australian Fleet is not merely the embodiment of force. It is the expression of Australia's resolve to pursue, in freedom, its national ideals, and to hand down unimpaired and unsullied the heritage it has received, and which it holds and cherishes as an inviolable trust".

The battle cruiser HMAS AUSTRALIA. One of the first ships, and the Flag Ship, of the new Australian Fleet.

Flash Traffic

F-100 gets the nod

The long awaited announcement of the winning contender for the SEA 4000 contract has been made.

The Navantia designed F-100 will be the next generation of so-called Air Warfare Destroyers (AWD) for the RAN.

At a cost of nearly $8 billion, and subject to successful contract negotiations, Spanish company Navantia will work with the AWD Alliance (Defence Materiel Organisation, ASC and Raytheon Australia) to deliver three ships to the RAN.

The first of the F-100s, to be known as the Hobart class, will be delivered in late 2014, followed by the second and third ships in early-2016 and mid-2017 respectively.

The Australianised F-100 design is capable across the full spectrum of joint maritime operations, from area air defence and escort duties, right through to peacetime national tasking and diplomatic missions. The RAN will undergo a quantum leap in its air warfare capability when the Hobart class enter service.

Since entering service with the Spanish Navy, F-100s, among their many other tasks, have worked alongside the USN as the first foreign Aegis equipped ship to be fully integrated into a USN Carrier Strike Group and has successfully been deployed as the flagship of NATO's Maritime Group Standing Reaction Force.

While the selection of the platform is a significant milestone for the AWD Programme, the work undertaken to date has demonstrated the value of the selection of the Aegis Combat System in 2004 as the central element of the AWD's war-fighting capabilities.

This decision ensured the Navy is armed with the world's most capable air warfare system, is interoperable with key coalition partners and can access the updates and technical support offered by the US and other in-service navies.

More than 300 highly-skilled AWD Alliance staff have been working on the development of two designs for Government consideration since 2005.

The selection of the F-100 follows two years of detailed research and simulation to determine the best ship to meet the needs of the Australian Defence Force through to the middle of this century.

However, when it came time to decide which ship to take there was some "robust discussion" had according to a number of media sources. The Chief of Navy, Vice Admiral Russ Shalders, favoured the Gibbs & Cox Evolved AWD design, while Defence and eventually the National Security Committee made up of key front bench cabinet Ministers, favoured the Spanish frigate.

The F-100 is an existing design that is in service with the Spanish Navy. This substantially reduces the cost and schedule risks traditionally associated with a project of this size and complexity.

The project will shortly move into the Build Phase which will give Australian Industry the opportunity to become involved in the most complex Defence acquisition ever undertaken in Australia. Work conducted by the AWD Alliance was able to determine little difference in the level of Australian Industry involvement between the two options.

The Government's decision to build the AWDs in Australia will ensure significant levels of Australian Industry involvement in both construction and through life support.

Australian Industry will deliver products and services for around 55 per cent of the $6.6 billion AWD Programme over the next 15 years which will be followed by high value through life support contracts into the middle of the century.

While Adelaide based ASC will conduct the final assembly of the AWDs, around 70 per cent of the ship modules will be built at other shipbuilding sites around Australia, potentially including sites in Western Australia, Queensland, New South Wales, Victoria and Tasmania.

The AWD Programme will eventually employ around 3,000 Australians in a variety of engineering and related fields working for a range of companies and suppliers throughout Australia.

The Government recognised the important work of the AWD Programme's Probity Advisors, Sir Laurence Street and the Australian Government Solicitor, in ensuring the AWD Programme was conducted in a fair and equitable manner.

The Spanish F-100 class frigate ALVARO DE BAZAN leaving in Sydney after a recent port visit. (Chris Sattler)

F-100 Characteristics

Displacement, tons: 5,853 full load

Dimensions, metres: 146.7x18.6x4.9.

Main machinery: CODOG; 2 GE LM-2500 gas turbines; 47,328 hp(m) (34.8 MW) sustained; 2 Bazán/Caterpillar diesels; 12,240 hp(m) (9 MW) sustained; 2 shafts; cp props.

Speed, knots: 28.

Range, n miles: 4,500 at 18 kt.

Complement: 250 (35 officers).

Missiles: SSM: 8 Harpoon Block II active radar homing to 130 km at 0.9 Mach; warhead 227 kg.

SAM: Mk-41 VLS (48 cells) SM-2.

Guns: 1 FMC 5 in (127 mm)/54 Mk-45 Mod 2 20rds/min to 23 km (12.6 n miles); weight of shell 32 kg. 2 Oerlikon 20 mm.

Torpedoes: 4-323 mm (2 twin) Mk-32 Mod 9 fixed launchers.

Countermeasures: Decoys: 4 SRBOC Mk 36 Mod 2 chaff launchers. SLQ-25A Nixie torpedo decoy.

ESM: Regulus Mk-9500; intercept.

ECM: Ceselsa Aldebaran jammer.

Combat systems: Lockheed Aegis Baseline 5 Phase III (DANCS); Link 11/16. SCOT 3, SATURN 3S.

Weapons control: Sirius optronic director; FABA Dorna GFCS. Sainsel DLT 309 TFCS. SQR-4 helo datalink.

Radars: Air/surface search: Aegis SPY-1D. E/F-band.

Surface search: DRS SPS-67 (RAN 12S). G-band.

Fire control: 2 Raytheon SPG-62 Mk 99 (for SAM). I/J-band.

Navigation: 1 Raytheon SPS-73(v); I-band.

Sonars: Raytheon DE 1160 LF; hull-mounted; active search and attack; medium frequency.

Helicopter: 1 SH-60B Seahawk.

LHDs announced

At the same time as the AWD announcement was made, the LHD project JP2048, was also announced.

Subject to successful contract negotiations, the preferred tenderer is Tenix and their Spanish Navantia designed LHD. The Dept of Defence will now enter negotiations with Tenix leading to a contract for delivery of the ships between 2012 and 2014.

The ships will cost approximately $3 billion and will be known as HMA Ships CANBERRA and ADELAIDE.

With their integrated helicopters and watercraft the ships will be able to land over a thousand personnel by sea and air, along with their vehicles, the new Abrams tanks, artillery and supplies. Each ship will also be equipped with medical facilities, including two operating theatres and a hospital ward.

In order to provide value for money, both tenderers – Australian companies – proposed partial overseas builds with a high degree of Australian fitout. Much of the combat and communications systems integration and installation will be done by Australian industry, which will be able to make the most of project opportunities in the leading edge technologies – electronics, systems engineering and integration, and design development.

The Government has ensured the LHD contract will lay the groundwork for Australian industry to provide full in-service support for the life of the ships. This will provide a steady and reliable source of demand on industry that, over ship life, will amount to several times the value of the actual construction programme.

Approximately one quarter of the construction of the amphibious ships will take place in Australia. The construction of the superstructure and the majority of the fitout will occur in Melbourne, with an estimated value of up to $500 million. The majority of combat system design and integration work will take place in Adelaide, worth up to $100 million for the South Australia economy. There will also be further work contracted to other states.

AE1 still lost

Following our story in the last issue of *THE NAVY,* the RAN has determined that the object located by its survey ship HMAS BENALLA in February this year is not that of the lost RAN WW I Submarine HMAS AE1.

Hopes of finding AE1 were raised when HMAS BENALLA identified what was thought to be a man made submerged object using her towed side scan sonar in February of this year. The object was found close to a position provided by AE1 researcher and retired Navy Commander John Foster.

The Coastal Mine Hunter HMAS YARRA conducted a four day search using her mine hunting sonar, divers and the ship's camera fitted Remotely Operated Vehicle (ROV) to search a 50 sq km area around the position of the object identified by BENALLA.

The object detected by BENALLA's sonar was confirmed by the ROV camera to be a submarine shaped rock formation. The complex bottom topography created some significant challenges in the conduct of the search and provided a number of possible objects of interest for YARRA's ship's company to investigate. All objects discovered will be further analysed when the camera footage of the underwater search is returned to Australia.

The crew of YARRA conducted a memorial service to commemorate the loss of AE1; this marked the end of the search activity.

The Australian Government says it will continue to support the search for AE1 if credible information about its likely location comes to hand. The Government also acknowledged the assistance of the Government of Papua New Guinea in permitting this search.

Seasprite to stay

In April 2006 a review of the Seasprite project was conducted following grounding of the aircraft due to concerns over the reliability of the aircraft's Automated Flight Control System.

The review paid particular attention to the:

- reliability of the Flight Control System and its associated safety implications;
- the ramifications to Naval aviation of the project being six years late; and
- the performance of the integrated sensor system.

The review examined how to resolve these issues so that the best possible capability can be provided to the RAN.

An RAN SH-2G Super Seasprite. The Government has decided to continue with the project as scrapping and buying a new helicopter would cost at least another billion dollars, instead $37million can be spent and the Seasprite delivered. (RAN)

After detailed consideration of the issues involved, the Government has decided to continue the Seasprite project, subject to satisfactory contract arrangements, at an additional cost of approximately $37 million.

The return to flying will involve a series of controlled steps to assess the contractor's performance, and to ensure the safety, performance and reliability of the Seasprite.

The Government will take steps to ensure that the contractor's progress is measured against milestones during the course of the additional work.

Details of what the contractor needs to fix and the schedule has not been published. Recent Senate Estimates Hearings have the aircraft reaching full operational capability in 2014.

MRH-90 flying

The first of Australia's 46 MRH-90 helicopters conducted its maiden flight on 29 March in Marignane, France. The aircraft flew for 1.5 hours without incident.

The first four MRH-90 are on schedule for delivery into Australia by the end of 2007, and the first fuselage of the 42 aircraft to be assembled in Australia arrived in Brisbane on 27 March.

The Government announced the acquisition of 12 MRH-90 troop lift helicopters for Army in August 2004, to bolster Australia's counter terrorism capabilities by releasing a Blackhawk squadron to provide dedicated support to our Special Forces on the east coast.

In June 2006, the Government announced the acquisition of an additional 34 MRH-90 to replace Army's Blackhawks and Navy's Sea Kings (see

THE NAVY Vol 68 No.4 p 15). The project value for the total acquisition of 46 aircraft is around $4.2 billion.

The project includes a $1.2 billion Australian Industry Capability package that focuses on state of the art composite construction, avionics, turbine engine assembly and maintenance, and ongoing software support.

The project also includes the construction of new or upgraded facilities in Townsville, Oakey, Nowra and Holsworthy.

The first of Australia's 46 MRH-90 on its maiden flight on 29 March in Marignane, France. (Defence)

HMAS PARRAMATTA honoured

The ship's company of the frigate HMAS PARRAMATTA was honoured recently at an Investiture Ceremony at Government House, Sydney.

The ship was honoured for its exceptional service in warlike operations during its deployment to the Persian Gulf in 2005-06.

The citation was accepted from NSW Governor Professor Marie Bashir, by Commander Justin Jones, HMAS PARRAMATTA's then Executive Officer, on behalf of the ship's company of PARRAMATTA who are currently deployed on operations.

HMAS PARRAMATTA leaving Sydney. (RAN)

"I am very honoured to accept this award on behalf of the ship's company of HMAS PARRAMATTA who sustained a high level of operational tempo during our deployment," CMDR Jones said.

"In doing so they set a new benchmark in performance, contributed significantly to the ADF mission of rehabilitating Iraq and in maintaining the security of the wider Gulf region."

The Anzac class frigate was deployed for Operation *CATALYST* in the Persian Gulf from 1 November 2005 to 25 March 2006. It was awarded a Meritorious Unit Citation in the 2007 Australia Day Honours list for its outstanding service.

During her deployment, PARRAMATTA conducted 186 boardings and security patrols, 1,111 boat evolutions, 330 flying hours in its embarked Navy Seahawk helicopter and 653 investigative queries of merchant vessels. PARRAMATTA was the first non-US Navy ship to be appointed Persian Gulf Air Defence Commander.

PARRAMATTA also initiated a successful mentoring program for the Iraq Navy which saw Iraqi naval officers spend time onboard PARRAMATTA to observe frigate operations first hand.

HMAS PARRAMATTA is the fifth RAN ship to be awarded a Meritorious Unit Citation since the award's inception, and the first to receive the award for operations outside of direct conflict.

Smart-S Mk 2 radar ready

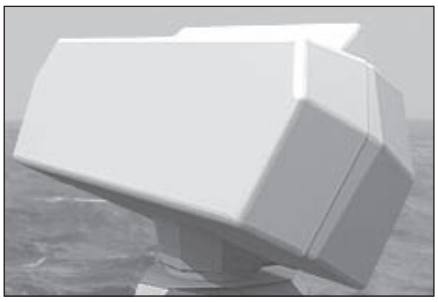
On 31 January and 1 February 2007 the first Thales SMART-S Mk 2 surveillance radar was subjected to a Factory Acceptance Test (FAT). The outcome of the test confirmed that the SMART-S Mk 2 was fully compliant with all requirements and even exceeded a number of specifications.

Representatives of the Royal Danish Navy, the launching customer of SMART-S Mk 2, witnessed the entire test.

The FAT was held right on schedule; three years after the Royal Danish Navy signed the contract for two radars.

After the acceptance testing the system will be transported to Denmark for installation on board HDMS ABSALON, the first of the two 'Flexible' Support Ships.

The second SMART-S Mk 2 system has since passed all environmental tests



The first Thales SMART-S Mk 2 surveillance radar for the Royal Danish Navy's two 'Flexible' Support Ships. (Thales)

and will be transported to a coastal test site in France for tests with various kinds of air and surface targets. Since November 2006 Factory Evaluation Flight Trials were performed with small aircraft, helicopters and calibrated targets having a radar cross-section of $0.1m^2$ to $0.01m^2$. The results of the tests were better than required by the customer.

SMART-S Mk 2 is Thales' new E/F-band 3D medium to long range Volume Search Radar, optimised for operation in littoral conditions. Its size and weight allow use by small fast attack craft or larger vessel types. SMART-S Mk 2 matches the engagement envelope of the Evolved SeaSparrow Missile and is thus well suited for air defence applications.

SMART-S Mk 2 has a coverage of 250 km in range and up to 70 degrees in elevation. SMART-S Mk 2's capabilities also include surface surveillance, surface gunfire support and helicopter guidance.

Nine SMART-S Mk 2 systems are currently under contract.

US Navy farewells last Sea King

Sailors from the USN Helicopter Sea Combat Squadron (HSC) 85 held a decommissioning ceremony for the USN's last H-3 Sea King helicopter on March 6.

The helicopter departed Naval Air Station North Island en route to Atlanta to be prepped for foreign military sales.

For the past six months the USN has phased out the H-3s and replaced them with the MH-60 helicopters which have newer technology, capabilities, and advanced ergonomics.

"Although this is a sad day for anyone who has had the pleasure of flying or working on it," said Cmdr. James Cluxton, commanding officer of HSC-85 who has flown the Sea King for the past

The last USN Sea King in formation with its replacement, the MH-60. (USN)

seven years. "The Sea King has far exceeded original expectations and has forged a long, proud legacy."

During the past 37 years, HSC-85 used the Sea King for search and rescue missions as well as to launch/recover mobile anti-submarine warfare targets and torpedoes.

Dave Williams, the USN's last official Sea King technical representative, said it was sad to see it go. "I will miss its reliability and versatility," he said. "It's an all around good aircraft."

As the H-3 Sea King prepared to taxi down the runway for the last time, Cluxton concluded his farewell.

"Today we say 'fair winds and following seas' to an old friend as this aircraft moves on to another location and to another round of dedicated service. There's only one King — long live the King!"

Fourth MEKO for South African Navy

In a ceremony on March 20, 2007, the fourth MEKO A-200 frigate for the South African Navy, SAS MENDI, was commissioned.

The SAS MENDI is the last of four frigates built for the South African Navy by ThyssenKrupp Marine Systems' shipyards, Blohm + Voss in Hamburg and Howaldtswerke-Deutsche Werft in Kiel. The SAS AMATOLA was the first of the 'Valour class' (Heldenmut class) delivered to South Africa in September 2003, where she was fitted out with weapons and associated electronic systems.

The MEKO Type A-200 frigates are the first warships in the world to combine propellers with a waterjet propulsion system. The ships have a considerably reduced infrared signature with exhaust gases expelled just above the waterline after a special cooling procedure. Application of this technology enabled the elimination of the funnel.

Besides the four Type MEKO A-200 frigates, the South African Navy's extensive modernization program encompasses three Type 209/1400 mod submarines, which are being built at Howaldtswerke-Deutsche Werft in Kiel and Nordseewerke in Emden. The second of the submarines, the CHARLOTTE MAXEKE was commissioned on March 14, 2007 in Emden.

Rolls-Royce to power DDG-1000

Rolls-Royce has been selected to supply the US Navy's most advanced surface combatant with the world's most powerful marine gas turbine.

Four MT30 gas turbine generator sets will be supplied to power two DDG-1000 Zumwalt class destroyers, with deliveries of the 36MW MT30 sets to begin in 2009.

An MT30 generator set currently provides power to the US Navy's DDG-1000 Land Based Test Site in Philadelphia. The MT30 has also been selected to power the first two Lockheed Martin Littoral Combat Ships.

The MT30 is a proven member of the Rolls-Royce Trent aero engine family, which has accumulated over 20 million operating hours powering passenger aircraft in service with more than 60 airlines and operators.

Patrick J. Marolda, Rolls-Royce President - Naval, said: "DDG-1000 is the enabling platform for the most advanced products and systems for the US Navy, and we are honoured to be playing our part. This decision also represents an unequivocal vote of confidence in Rolls-Royce and our ability to deliver power solutions to the US Navy and the global market."

The ships are scheduled to be built at Northrop Grumman Ship Systems in Pascagoula, Mississippi and General Dynamics Bath Iron Works in Bath, Maine. The first ship delivery is planned for 2012.

Third Type 45 destroyer started

The first two blocks of the third Type 45 destroyer, HMS DIAMOND, have been moved into the BAE Systems yard at Govan, Scotland. The blocks, which make up the stern and one of the mid sections of the ship, will now be joined together ahead of the final three blocks being moved into position. The destroyer will then be prepared for launch on 27 November this year.

This latest move signals significant progress on the Type 45 programme, which has already seen the hugely successful launch of the second ship, DAUNTLESS at the start of 2007.

The first of two blocks of the third Type 45 destroyer, HMS DIAMOND, being moved into the BAE Systems yard at Govan, Scotland. (BAE Systems)

US Navy terminates Littoral Combat Ship 3

Secretary of the US Navy Donald C. Winter announced on 9 April that the Department of the Navy had terminated construction of the third Littoral Combat Ship (LCS 3) for convenience under the

Termination clause of the contract because the Navy and Lockheed Martin could not reach agreement on the terms of a modified contract.

The US Navy issued a stop-work order on construction on LCS 3 in January following a series of cost overruns on LCS 1 and projection of cost increases on LCS 3, which are being built by Lockheed Martin under a cost-plus contract. The Navy announced in March that it would consider lifting the stop-work order on LCS 3 if the Navy and Lockheed Martin could agree on the terms for a fixed price incentive agreement by mid-April.

The Navy worked closely with Lockheed Martin to try to restructure the agreement for LCS-3 to more equitably balance cost and risk, but could not come to terms and conditions that were acceptable to both parties.

The Navy remains committed to completing construction on LCS 1 under the current contract with Lockheed Martin. LCS 2 and 4 are under contract with General Dynamics, and the Navy will monitor their cost performance closely.

The Navy intends to continue with the plan to assess costs and capabilities of LCS 1 and LCS 2 and transition to a single seaframe configuration in fiscal year 10 after an operational assessment and considering all relevant factors.

General Dynamics' ships will continue on a cost-plus basis as long as its costs remain defined and manageable. If the cost performance becomes unacceptable, then General Dynamics will be subject to similar restructuring requirements.

Raytheon and USN team for Standard Missile improvements

US company Raytheon and the USN have teamed to successfully complete a major update to the Standard Missile-2 (SM-2). The improvement, called a "Manoeuvrability Upgrade", provides SM-2 with substantially increased performance against new, anti-ship weapons while delivering increased capability to the warfighter.

"We cannot afford to rest on our laurels or be content with our current capability," said Capt. Tim Batzler, US Navy Standard Missile programme manager. "Our sailors deserve the best we can give them, and this upgrade provides that."

The team included representatives from the US Navy Standard Missile programme office and Naval Weapons Station/Seal Beach and a cross-section of manufacturing and engineering employees from Raytheon Missile Systems. Team members worked to develop, produce and validate the performance upgrade to the weapon. The improvement strengthens Standard Missile's position as the world's premier ship area air defence weapon.

Standard Missile has been the USN's primary surface-to-air fleet air defence weapon for more than three decades. It is in operation with 13 other Navies.

VIKRAMADITYA due by end of 2008

INS VIKRAMADITYA (previously know as the Soviet ADMIRAL GORSHKOV) a 44,570-tonne aircraft carrier, will arrive in Mumbai towards the end of 2008 or early 2009, Chief of Indian Naval Staff Admiral Sureesh Mehta said.

"There is no major delay in the delivery schedule as has been projected in a section of the media. It has only slipped by three or four months, which can be expected in a complex programme, like this one," he said.

"The Russian defence minister has assured our Defence Minister that there will be no big delay in the delivery schedule of the aircraft carrier," he said. There were reports that the handing over of the warship to the Indian Navy has been delayed at least till 2010 because 700 km of additional cables have to be laid on the ship. According to the earlier plan, the vessel was to arrive in Mumbai in May 2008.

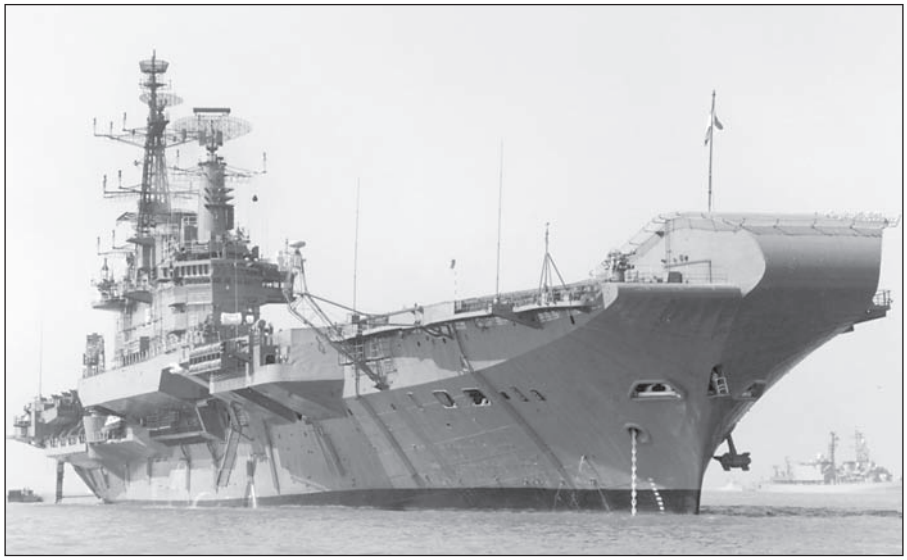
The aircraft carrier, which has been acquired for US$1.6 billion following an MoU between India and Russia in December 1998, will carry about 20 MiG-29s and a naval variant of an indigenous light combat aircraft. Mehta said 34 warships are now under construction at Indian shipyards and 40 will be ordered for expansion and replacement. These new ships are expected to be commissioned in the next 15 years.

"Most of these warships will be manufactured in our shipyards. My intention is to ensure that shipbuilding capability is strengthened in India," he said. "We are not looking at a bigger Navy, but a smarter Navy. We do not look at Navy in terms of numbers, but it has to be capability-driven which can easily respond to different types of threat scenarios in seas," he said.

He said work on the air defence ship, the first indigenous aircraft carrier, was on track at Kochi shipyard and it will join the fleet in 2011.

Given the time frame for delivery of the indigenous aircraft carrier, a study group has been constituted to explore the feasibility of extending the service life of the Indian Navy's current aircraft carrier, VIRAAT, till 2012.

The study group has already stated that extension of the service life of the ship up to 2012 is possible subject to modifications being undertaken in addition to routine periodic maintenance.



The Indian Navy's current aircraft carrier, INS VIRAAT, at anchor. The Indian Navy may extend her service life to 2012. (John Mortimer)

Singapore commissions RSS FORMIDABLE

The Republic of Singapore Navy received its first frigate – the RSS FORMIDABLE – on Saturday 5 May at Changi Naval Base during celebrations to mark its 40th anniversary, attended by past and present Navy Chiefs.

The ship is the first of a fleet of five frigates coming into service over the next two years.

Seahawk helicopters for use onboard the frigates are due in three years, and a new class of submarines is expected by the end of the decade.

AUDACIOUS order sustains UK submarine industry

Britain's BAE Systems has welcomed the announcement of a contract for approximately £200 million by the UK Ministry of Defence (MoD) for the start of construction of the fourth Astute-class nuclear powered attack submarine. Boat four is to be named AUDACIOUS.

This contract runs to March 2008 and covers initial build work on the submarine. The UK's MoD aims to contract for the whole boat by late 2008, and detailed terms and conditions will be agreed over the intervening period. The final contract placed will cover all aspects of the construction and completion of the submarine. It comes on top of orders for long-lead items that have already been placed with industry both to prepare the way for the construction of AUDACIOUS and to support the industrial infrastructure.

The 7,800 tonne AUDACIOUS will be the fourth of the Astute class; the largest and most powerful attack submarines ever built in Britain for the Royal Navy. The total cost for the first three Astute submarines is £3.65 billion. Work on boat four is expected to start immediately at BAE Systems in Barrow-in-Furness. The Astute submarines are being delivered to the Royal Navy on an agreed 22 month drumbeat.

The rollout for naming and launch of the first of class Astute submarine takes place on June 8 2007, and will be handed over to the customer August 2008, with an in-service date early in 2009.

The Astute class will be the largest, most capable and widely deployable attack submarines that the Royal Navy has ever operated, and will replace the Swiftsure and Trafalgar class, which have been in-service since the 1970s and 1980s respectively. The Astute Class will have improved communications systems to support joint operations and an enhanced ability to operate in shallower littoral environments compared with previous classes.

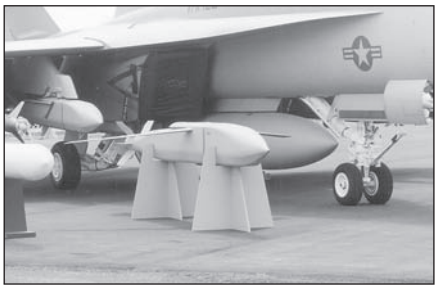
Anti-ship JSOW to be developed

US company Raytheon has received a US$93.7 million Naval Air Systems Command (NAVAIR) contract to further develop the Joint Standoff Weapon (JSOW) AGM-154C1 (formerly JSOW Block III). The new JSOW variant — scheduled to be produced in 2009 — will provide US Navy warfighters with a capability against moving maritime targets.

"This contract award represents a major step forward in providing the Navy fleet pilots with much-needed capability against moving ship targets," said John O'Brien, Raytheon's JSOW programme director. "The results of detailed trade studies performed by the NAVAIR-Raytheon team enabled Raytheon to develop an initial architecture and initial mission effectiveness assessments for this new JSOW variant. The studies were critical to the new seeker design, seeker software algorithm development and data link selection."

The AGM-154C1 builds upon the JSOW Block II weapon by adding a weapons data link to receive in-flight target updates from the F/A-18E/F aircraft. The new JSOW variant includes updated seeker algorithms designed to hit moving targets. Significant work on the seeker algorithms has been completed on Raytheon internal research and development funding in 2005 and 2006.

AGM-154C1 will maintain all standoff, survivability capability and improved anti-jam capability inherent in the current JSOW weapon. The AGM-154C1 variant will maintain JSOW's low radar cross section and infrared signature. These are key stealth features, which ensure a high probability of



An AGM-154 JSOW. (Mark Schweikert).

JSOW survival en route to highly defended targets.

Earlier this year, Raytheon competitively awarded a subcontract to Rockwell Collins, Cedar Rapids, Iowa, for the development and qualification of a dual waveform (UHF and Link 16) weapon data link called Strike Link. The Raytheon team plans to use this data link in several weapons and, with the assistance of the NAVAIR team, will be the supplier of the Harpoon Block III data link.

JSOW is a joint USN and US Air Force programme. It is a family of low-cost, air-to-ground weapons that employs an integrated GPS/Inertial Navigation System that guides the weapon to the target. The weapon is dropped and deploys wings to enable it to glide to the target using the kinetic energy from the launch aircraft's speed and height. The JSOW uses a common and modular weapon body capable of carrying various payloads. Its long standoff range, up to 70 nautical miles, allows delivery from well outside the lethal range of most enemy air defences.

South Korea launches most powerful Aegis equipped destroyer

South Korea recently launched its first Aegis equipped destroyer at a shipyard in the south-eastern port city of Ulsan on Friday May 25, and in so doing, become the fifth country in the world to own such a ship.

The new KDX-III destroyer is 166 metres long and has a displacement of 7,600 tons. It was built at the Ulsan dockyard of Hyundai Heavy Industries Co. at a cost of 1 trillion won (US$1 billion).

Named KING SEJONG after the Joseon Dynasty monarch, who helped create the Korean alphabet in the 15th

century, the warship is the most powerful in the South Korean Navy.

The KDX III class destroyers are the world's first destroyers to integrate the AEGIS combat system with the RIM-116 Rolling Airframe Missile (RAM) system. A 21-round launcher is located forward of the bridge. Other point defence weapons consist of a 30mm Goalkeeper system facing aft.

The new KDX-III destroyer KING SEJONG. The KDX III are more powerful than the US Arleigh Burke class destroyers which they were modelled on.

Their main gun is a 127mm/L62 Mk. 45 Mod 4 naval gun. Aside from firing the standard munition like its previous versions, the new gun can also fire EX-171 Extended-Range Guided Munitions, which have an extended range of 117 km.

The class have a total 128 VLS cells for vertically launched missiles. Making them more powerful than the US Arleigh Burke class destroyers they were modelled on.

Anti-aircraft armament consists of the SM-2 Block IIIB in an 80-cell VLS aft.

Anti-Submarine Warfare armament consist of both 16 K-ASROC style Hong Sahng-uh anti-submarine rockets and 32 K745 LW Cheong Sahng-uh torpedos.

Land-attack capability is provided by the recently-developed Korean Hyunmoo IIIC cruise missile with performance similar to the American Tomahawk. The ship will carry 32 of these missiles. Both the ASROC and Cruise missile will be used from the forward 48-cell VLS.

Anti-ship capability is provided by an indigenous developed anti-ship missile known as SSM-700K Hae Sung, whose performance is similar to the American Harpoon. The ship carries 16 of these.

The destroyer also embarks two medium sized helicopters.

The ship's maximum speed is 30 knots with a usual cruising speed of 20 knots. It will be deployed for naval operations in 2009 after sea trials.

The South Korean Government plans to commission three KDK III destroyers by 2012 with a total budget of about 3 trillion won.

Tenix delivers NZ Multi-role Vessel

On 31 May Australian company Tenix Defence delivered an 8,000-tonne multi-role vessel – to become HMNZS CANTERBURY – to the New Zealand Ministry of Defence and Royal New Zealand Navy.

In a ceremony at Tenix's dockyard at Williamstown, Melbourne, Tenix Chairman Paul Salteri handed over the vessel to the New Zealand Secretary of Defence, John McKinnon, and New Zealand Chief of Navy, Rear Admiral David Ledson.

The MRV is the first of seven ships being constructed for New Zealand under the NZ$500m Project Protector. It was built by Tenix sub-contractor Merwede in the Netherlands, and sailed to Australia in September last year for final fit-out.

Tenix Group Managing Director and CEO, Greg Hayes, said the delivery was an important milestone for the company.

"Tenix Defence selected the design of this ship, won the contract against strong international competition and managed construction of the MRV in the Netherlands," he said.

"With major contracts for Australia under its belt, Tenix continues to strengthen its shipbuilding capabilities with Project Protector and is actively pursuing further work in Australia and overseas.

"These contracts provide jobs and build skills and capabilities, not just at Tenix, but among hundreds of Australian and New Zealand suppliers and sub-contractors.

"We build prosperity, and we're proud of it," Mr Hayes said.

The 131-metre long MRV can carry 250 troops and their equipment and land them – if wharfage is not available – using two 59-tonne Landing Craft Medium carried aboard and loaded via a stern ramp. It is ice-strengthened, has its own Super Seasprite helicopter, and can carry four additional NH-90 helicopters. It has a range of 8,000 miles and a top speed of more than 19 knots.

As part of Project Protector, Tenix is also constructing two 1600-tonne Offshore Patrol Vessels at Williamstown (the first launched last year – see *THE NAVY* Vol 69 No 1 p15.) and four 340-tonne Inshore Patrol Vessels at its yard at Whangarei in New Zealand.

The decommissioning ceremony of USS JOHN F. KENNEDY (CV 67). Many distinguished visitors and guests attended the historical decommissioning ceremony of the aircraft carrier in Mayport on 23 March. KENNEDY served the US for more than 38 years and had 18 official deployments. (USN)

Observations

By Geoff Evans

Two New Ship Types – The Government Turns to Spain

The announcement last month that the Spanish-designed F-100 class frigate had been selected as the RAN's new air warfare destroyer (AWD), to be known as HMA Ships HOBART, BRISBANE and SYDNEY, marks another stage in the protracted process of acquiring the ships, the need for which was accepted more than six years ago. It also needs to be said that many in the naval community will be disappointed at the choice as a design based on the existing American Arleigh Burke-class destroyer was considered preferable. The Government also approved a Spanish design for two new large amphibious assault ships.

Destroyers are versatile ships and invaluable in any blue-water Navy, not least to the RAN which began in the mid-nineties to consider replacements for its guided missile destroyers PERTH, HOBART and BRISBANE, all commissioned in the nineteen-sixties and approaching the end of their economic life.

In 2000 the Government accepted the need for air-defence capable ships and proposed a new class of three to replace not only the three DDGs but also the six guided missile frigates, all of which would be out of commission by 2013. The customary process of acquiring ships for the RAN usually involved selection of a suitable ship or design (for many years usually from the Royal Navy), modified as necessary for Australian conditions, and generally built at either the Government's Williamstown Dockyard (Victoria) or the privately owned Cockatoo Island Yard in NSW. The three DDGs and four FFGs however, built in the United States were successful American designs and large numbers were built for the USN and other Navies. Two FFGs were built at Williamstown. The process of acquiring combat ships for the RAN is now rather more complicated.

Following the 2000 decision, Navy continued planning and at a Press Conference in October 2004, immediately before that year's Federal election the Defence Minister made a statement that subject to re-election "to immediately progress the acquisition for three new Air Warfare Destroyers"; he went on to say they would be built in Australia and based around the latest Aegis air warfare system from the United States. The Minister also referred to a new form of tender which would take into account not only price but investment in the defence industry and service and support of the ships during their life. Three ships were being assessed – from the United States, Spain and Germany.

With his government re-elected, in August 2005, the Minister was able to report progress. A shipbuilder had been selected – to the surprise of many observers the Government-owned ASC, generally associated with submarines, rather than Tenix, with its skilled workforce nearing the end of the 10-ship Anzac frigate project; a ship designer was announced – Gibbs & Cox, also associated with the American ship contender; and the combat system engineer chosen – Raytheon Australia – the American company long associated with missiles and missile defence. The Minister also said an AWD System Centre would be established to house up to 200 people working on the project. The Centre, accommodating representatives from the various organisations involved – the Defence Materiel Organisation, the shipbuilder, combat system engineer and designers – was officially opened at Felixstowe in South Australia a year later.

The process of providing the RAN with three new combat ships has been described as unique, a description with which few would disagree. Three foreign ships were nominated as possible contenders for the Australian ships, subsequently reduced to two – a Type F-100 frigate in service with the Spanish Navy and a design based on the USN's Arleigh Burke-class destroyer. While the American destroyer is substantially larger than the Spanish frigate and among other things has more missile cells, a better range and capacity to accommodate future developments, it is understood the Australian version would have been smaller than its American counter part and less crew intensive but with capacity for development. Given the very close links between the USN and the RAN it is not surprising many in the naval community are disappointed in the Governments choice.

What could be regarded as a small cloud on the horizon is the Federal election due towards the end of the year. At the time these comments are made the views of the Opposition – the alternative government – on the AWD and amphibious ship projects are unknown; however, given the considerable effort and expenditure that have already gone into the project and will no doubt increase during the coming months, it would seem unlikely a different government would seek to cause further delays, let alone cancel such an important defence project.

Commodore H. J. P. ADAMS AM RAN (Rtd)

Commodore Harry Adams, who died in April at the age of 75, will be missed by many organisations as well as his friends.

The writer first met Harry Adams who, when serving as Commanding Officer of HMAS CERBERUS in 1980, invited him to be Reviewing Officer at a Recruit School passing out parade; an unusual invitation and greatly appreciated by one who had been a recruit in days gone by.

But Harry Adams was an unusual man in many ways, as the writer found out several years later.

On retiring from the Navy, Harry became an active member of a number of organisations, in the main defence-related and including the Navy League in which he became a Vice-President; it was in this position he and the writer became closely associated in pursuing the Navy League's objective of encouraging Australians to become more maritime conscious, a rather frustrating task at times. Harry was also particularly active in those organisations involved with the welfare of defence personnel and conditions of service.

Harry Adams was imaginative and an innovator, qualities hidden to some extent by his unassuming manner, but not to his friends and those who knew him well. He will be greatly missed.

The German Navy Today

By John Grima

Sea trials of the Type 124 frigate SACHSEN (F-219) and the frigate HAMBURG (F-220) (rear), March 2004. (Blohm & Voss)

Recently the modern German Navy celebrated its 50th anniversary. Over this time the German Navy has evolved from one that needed assistance to rebuild its fleet following World War II to being one of the most technologically advanced Navies in the world today. The German Navy's mission over the years has changed from guarding NATO's northern maritime flank from the Warsaw Pact to peacekeeping missions around the world.

The modern German Navy is a part of the German Armed Forces or Bundeswehr. It has been know by a number of names over the past 150 years and traces its roots back to the Imperial Fleet of the revolutionary era of 1848–1852, and more directly the Prussian Navy. The Prussian Navy later evolved into the Northern German Federal Navy and then became the Imperial Navy. From 1919 to 1921 it was known as the Temporary Imperial Navy and then become known as the Reichsmarine. During WW II it was know as the War Navy or Kriegsmarine. In 1956, with West Germany's accession into NATO, a new navy was established and was referred to as the Federal Navy or Bundesmarine. With the reunification of Germany in 1990, it was decided to simply use the name Deutsche Marine (German Navy), which is its name today.

The sail training ship GORCH FOCK.

Fleet Building Post WW II

Post WW II the German Navy had limited resources and in order to build its fleet needed assistance from the West. This is in stark comparison to today where the German Navy has placed orders for a number of the most technically advanced warships of any navy.

After the German Navy joined NATO they asked the American Government for the loan of 12 Fletcher class destroyers and the British Admiralty to sell them seven escort vessels or frigates for training purposes. The minesweepers that were captured by the US from Nazi Germany during WWII were located at the advanced base in Bremerhaven and consequently given to the new Bundesmarine. Some of the US and British vessels of the Rhine Flotilla were also given to the Bundesmarine. The initial vessel that was specifically ordered for the post WW II German Navy was the sail training ship GORCH FOCK, which is still the flag ship for the German Navy today. The GORCH FOCK is based in Kiel and is a training ship for cadets.

In 1958 the German Navy started construction of the first of six frigates being known as the class 120, or Köln class, which were commissioned in 1964. These frigates were built for escort and submarine hunting. It also placed orders for four class 101 destroyers (Hamburg class). The construction of these destroyers started in 1960 and featured the same standard of technology as the Köln frigates. The 101 class destroyers were the German Navy's largest warships until the advent of the 122 class frigates in the early 1980's.

Cold War Era

During the 1960's the German Navy expanded significantly with additional orders being made for five tender vessels and four support ships for the new fast attack boats and minesweeper squadrons. The supply fleet placed these vessels into service in 1968. In 1967 two 762 class mine transporters were also delivered. In addition, an order was made for the training ship DEUTSCHLAND.

During the 1960s the German Navy purchased three new US built Charles F Adams class destroyers (LÜTJENS, MOLDERS and ROMMEL) but to German specifications. These were commissioned between 1969 and 1970.

(From left to right) The Bundesmarine's Charles F. Adams class destroyers ROMMEL, LÜTJENS and MOLDERS. The German destroyers differed from the RAN's in having a Mk-49 RAM launcher forward of the bridge and on the stern behind the Mk-13 launcher. RAM is one of the best anti-missile defence systems available and was developed cooperatively by the US and Germany.

In the mid 1970's the new 122 class (Bremen class) frigate building programme began. In September 1979 the first of the Bremen class was launched, with the last entering service in 1990 (BREMEN, NIEDERSACHSEN, RHEINLAND-PFALZ, EMDEN, KÖLN KARLSRUHE, AUGSBURG, & LUBECK). These eight frigates are still in service today and were built to replace the Köln and Fletcher classes.

The Breman class is a modified Dutch Kortenaer class frigate design. Although they look similar from the outside they have different interiors.

As part of NATO the German Navy was dedicated to its own waters, being the North Atlantic and the Baltic Sea. Its main role was to hold back the Soviet fleet from sailing through the Baltic Sea into the North Atlantic as much as it could until more help from NATO could eventuate.

The Type 122 class frigate NIEDERSACHSEN with other NATO units in the Atlantic Ocean. (USN)

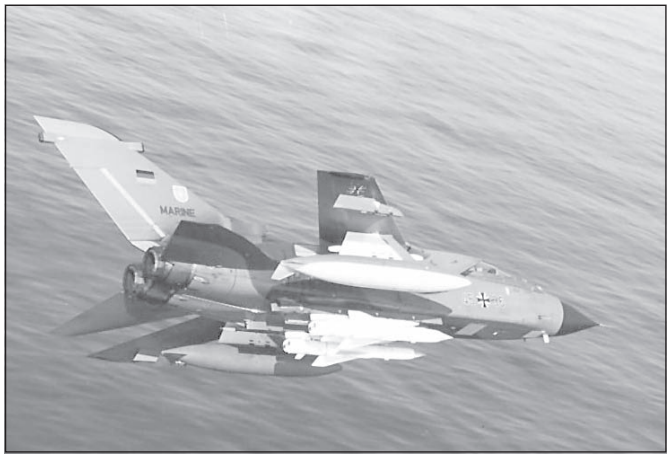
The 1990s

Up to the 1990s the German Navy had eight frigates and seven destroyers. It also had four missile boat squadrons consisting of 40 fast attack craft. They were heavily armed to face the Soviet Fleet. It also had 33 minehunters/-minesweepers in four squadrons and 18 Troika Seehund minesweeper – Drones. These are remote controlled boats employing magnetic and acoustic sweeping gear and are part of the "Troika" minesweeping squadron.

The Navy also consisted of 22 small diesel electric U boats and two MFG (marine airforce wings) consisting of 53 Panavia Tornado IDS strike variants (the Tornado squadrons were only recently disestablished from the Navy's order of battle).

When East and West Germany reunited in the 1990s the West German Navy acquired all of the vessels of the Volksmarine (People's Navy) of East Germany. It consisted of three Koni class (Russian built frigates), missile boats and minesweepers.

A number of former Volksmarine vessels were soon sold to third world navies (Indonesia being a major customer) and the balance of the fleet scrapped due to obsolescence. To this day only two accommodation ships from the Volksmarine (which were modernised) are still in service today.



A Marineflieger Flotilla Tornado strike fighter. At one stage the German Navy operated over 50 of these potent strike aircraft to attack Soviet warships in the Baltic transiting to the North Atlantic. The Tornado pictured is armed with two AS-34 Kormoran anti-ship missiles. Each had a range of 30kms at Mach .9 with a 160kg warhead.

Roles and Missions for Today's Deutsche Marine

The Deutsche Marine is still a big part of the NATO alliance and defender of German waters. It also participates in peacekeeping and peace enforcement missions as part of NATO or the UN. German warships actively participate in all four NATO maritime area groups. Post September 11 2001, as many countries joined forces to fight terrorism the Deutsche Marine also made a contribution. It was engaged in Operation Enduring Freedom and the ongoing NATO operation *Active Endeavour.*

The latest contribution of the Deutsche Marine is in UNIFIL (United Nations Interim Force in Lebanon) where it is patrolling waters off the Lebanese coast in the wake of the recent Israel/Hezbollah conflict.

Other missions the German Navy has been involved with include the humanitarian relief missions in Bunda Aceh/Indonesia after the Tsunami – incidentally working with RAN units.

The Missile Patrol Craft DUCHS and a Naval Air Wing 5 Sea King conducting a winching operation. At one stage the German Navy had 40 of these fast, agile, small attack craft armed with four Exocet anti-ship missiles each. DUCHS is also fitted with an anti-missile RAM launcher at the stern. The Missile Patrol Craft fleet now numbers approximately 20 while the Sea King fleet numbers 21.

The Current Fleet

The Deutsche Marine is organised as two flotillas. It is commanded by the Chief of the Naval Staff in the Federal Ministry of Defence. Fleet Command is at Glucksburg and the Naval Office at Rostock where her major ships are deployed from. The service is made up of approximately 24,650 personnel.

The German Navy's First Flotilla headquarters is in Kiel and consists of:

- 1st Corvette Squadron (Warnemünde) (currently being equipped with the K-130 corvette).
- 1st Submarine Squadron (Eckernförde).
- 7th Fast Patrol Boat Squadron (Warnemünde).
- 3rd Mine Counter Measure Squadron (Kiel).
- 5th Mine Counter Measure Squadron (Kiel).
- Submarine Training Centre.
- Naval Special Forces.
- Naval Protection Forces.
- Centre of Excellence for Operations.

Second Flotilla is based in Wilhelmshaven and consists of:

- 2nd Frigate Squadron.
- 4th Frigate Squadron.
- Auxiliary Squadron.
- Naval Air Wings 3 & 5.

The 2nd and 4th Frigate Squadrons of the 2nd Flotilla maintain the major ships (all 15 frigates). The 2nd Flotilla's make up provides the German Navy with the ability to operate globally and respond to NATO demands. The auxiliary squadron supports the two frigate squadrons giving them all the essential services, logistic, engineering and support needed to undertake missions.

Recent Additions

The Deutsche Marine's current major fleet units consist of four Type 123 Brandenburg class frigates (BRANDENBURG, SCHLESWIG-HOLSTEIN, BAYERN & MECKLENBURG-VORPOMMERN), three Type 124 Sachsen class frigates (SACHSEN, HAMBURG & HESSEN) – both classes based on the same MEKO design – and eight Type 122 Bremen class frigates. There are also a number of new vessels in the pipeline for the German Navy as it adapts to its changing missions.

The Sachsen type frigates (Type F-124) are the most modern vessels. This class of frigate (which would more

The Type 123 class frigate MECKLENBURG-VORPOMMERN in the Kiel Canal. (Harald Carstens)

The air warfare Type 124 class frigate SACHSEN. The 124 class may be used by the Deutsche Marine for theatre ballistic missile defence duties using the SM-3 anti-ballistic missile weapon. (Harald Carstens)

accurately be known as a destroyer) are the latest addition to the navy. They were designed for air defence duties and replaced the old Lütjens class destroyers (Charles Adams class). The platform design of these ships is based on the Brandenburg class Type F-123 but with a different propulsion configuration and a newly designed automation system. The delivery of the last vessel, HESSEN, was completed in 2006.

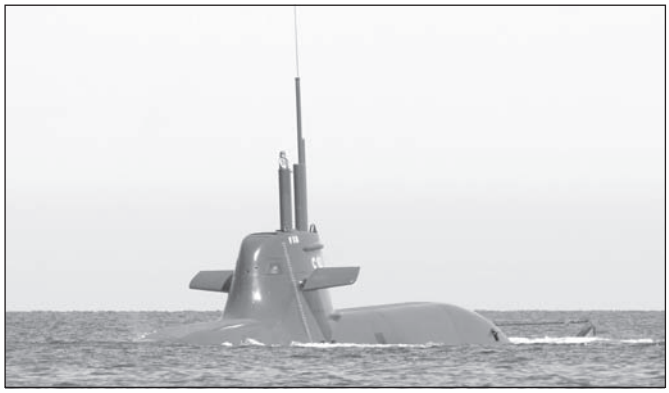
The ships are armed with SM-2 and ESSM anti-aircraft missiles. The ships also use the SMART-L and APAR radar systems for search and fire control enabling up to 16 simultaneous anti-air engagements. Like the US SPY-1 phased array radar, the 3D SMART-L air search radar is also able to detect and track low earth orbiting satellites. This unexpected capability has prompted the Deutsche Marine's command to explore the Theatre Ballistic Missile Defence role for the F-124 class.

The Deutsche Marine recently took delivery of a new submarine class – the 212A (multi purpose submarine). These submarines are the first full production submarines with Air Independent Propulsion (AIP). AIP transforms hydrogen and oxygen directly into energy with minimal noise. This new propulsion system allows the submarine to conduct fully submerged operations at patrol speed for several weeks. It is the ultimate in the field of non-nuclear submarine propulsion technology.

Eight submarines are being built in two batches. The first to enter service in 2005 was U31 and U32, followed by U33 in 2006. U34 is due to commission shortly.

The delivery of two submarines in the second batch is planned for 2011 and 2013.

Two of the same class of submarine have been built for the Italian Navy which entered service in 2006. The Italians also have another two on order.



The new Type 212A Diesel/Electric AIP submarine U-34 diving during sea trials. (Harald Carstens)

K-130 class corvette

In December 2001 a construction contract for five K-130 class corvettes was signed. The acquisition of the new K-130, or Braunschweig class, corvette class is reflective of the changes in the German Navy's mission to preventive security operations. The K-130 will replace many of the small fast attack craft. Another batch of five is planned for 2010–2012.

These corvettes will feature design measures to reduce both radar and infrared signatures. The ships are built in sections which are assembled in different locations at the same time and then brought together on the slipway. The first corvette of the class, BRAUNSCHWEIG, was launched in April 2006 and started sea trials on December 11, 2006. Commissioning of the five corvettes will take place over the next 18 months (BRAUNSCHWEIG, MAGDEBURG, ERFURT, OLDENBURG &, LUDWIGSHAFEN).

The corvettes are armed with two Mk-49 RAM missile launchers each with 21 Block 1B anti-missile/aircraft missiles. They have space for eight anti-ship missiles and a Lynx sized helicopter on a pad aft (no hanger). The corvettes are also armed with a 76mm rapid fire gun and mine racks for mine laying duties.

The new K-130, or Braunschweig class, corvette BRAUNSCHWEIG on trials. The current batch will include four other corvettes.

F-125 class frigate

The F-125 is classified as a frigate but in size and role it could be easily classified as a destroyer, much like the F-124 Sachsen class. These frigates will be more capable to support the land attack mission. They will be designed with substantial radar, infrared and acoustic signature reduction measures.

The planned budget for these four ships is 2.2billion euros. The four ships are planned for in service dates of 2013, 2015, 2016 and 2017 and will replace four of the eight Bremen 122 class frigates. The other four Bremen class frigates will probably be replaced by the second batch.

An interesting feature of these frigates is that they will be capable of being deployed for periods of up to two years. This requires that they have long periods between major maintenance cycles.

To enhance survivability of the frigates, important systems are laid out in a two island design, i.e. systems present at least twice at different places within the ship. This is also visible in the superstructures, which are split into two larger pyramidal deck houses. This redundancy will hopefully ensure the ship remains operational despite damage suffered through enemy action, but also allows F-125 frigates to keep station if needed when something breaks down and no replacement is available.

The ships will be equipped with a CODLAG propulsion system (Combined Diesel and Electric Gas Turbine). The ship's diesel engines are connected to electricity generators to provide power to two electric motors that drive the propeller shafts directly, avoiding the need for a gearbox. On diesel electric mode the ship will be capable of approximately 20 knots. To reach maximum speed the gas turbine is used to provide more power.

Each ship will have two crews of 105 personal and will change over every four months. Ship's complement is half that of the F-124 Sachsen class frigate.

A requirement of the F-125 is to provide tactical support from the sea to land forces. For this requirement a naval version of the 155mm PZH 2000 Howitzer and the MLRS (multiple launch rocket system) was being developed. Testing of the PZH 2000 Howitzer turret was carried out in August of 2005 on F-221 HESSEN. However, it was recently announced that the OTO Melara 127mm light weight gun would used instead.

Type 702 – Berlin class replenishment ship

Two Type 702 replenishment ships have recently been built (BERLIN & FRANKFURT AM MAIN) and are the largest ships in the Navy. They have a length of 173.7 metres and displacement of 18,637 tonnes. Two more ships were expected to be built however, due to budget reasons only one other is expected to be approved this year. The last two where planned to replace the German Navy's two Rhön class Type 704 fleet oilers (SPESSART & RHÖN).

The new Type 702 replenishment ship BERLIN at sea. One other is planned bringing the total for the class to three.

A WG-13 Super Lynx of Naval Air Wing 3 with two training Sea Skua anti-ship missiles. The Lynx is the main shipboard helicopter of the Deutsche Marine's frigate squadrons. There are 22 in the Navy.

Conclusion

Other current plans for the modern German Navy include the purchase of approximately 30 MH-90 helicopters to replace its British made Lynx and Sea King Helicopters. There are also plans to acquire a number of P-3 Orion aircraft to replace the existing 'Atlantic' Mk-1 maritime patrol aircraft which has been in service for over 30 years. There are also upgrade plans for the existing major fleet units in the areas of combat systems and networking.

With its building programme in place and out of area NATO/UN missions in creasing the German Navy is gradually establishing itself as a world naval power.

We can expect to see more Deutsche Marine activity in the Pacific and Indian Oceans before too long.

A German Mk-1 Atlantic maritime patrol aircraft from Naval Air Wing 3. These are currently being replaced with ex-Dutch P-3C Orion aircraft.

HATCH, MATCH & DISPATCH

Dispatch
HMAS GLADSTONE decommissions to become museum

March 13, 2007 marked an important milestone in the life of the Royal Australian Navy's Fremantle class patrol boat, HMAS GLADSTONE, which was decommissioned and subsequently gifted at a ceremony in Cairns.

In a centuries-old tradition, HMAS GLADSTONE was decommissioned in her homeport after 22 years of valuable service to Navy. GLADSTONE is the thirteenth Fremantle to be decommissioned with the introduction of 14 state-of-the-art Armidale class patrol boats.

During the decommissioning ceremony, which was attended by the Commander Australian Fleet, Rear Admiral Davyd Thomas AM CSC and past and present crews, the ship's Australian White Ensign was lowered for the last time and handed to the ship's Commanding Officer, Lieutenant Commander Jonathan Dick.

HMAS GLADSTONE will be sadly missed by her past and present Ship's Company who have sailed in her for over 620,000 nautical miles in national and international waters for the past $22^1/_2$ years.

The government also announced that she will soon begin a new chapter in her life with the Gladstone Maritime History Society, which plans to preserve and exhibit her as a land-based display at the Gladstone Maritime Museum.

The Gladstone Engineering Alliance will locate and set the boat for display, at the mouth of the Auckland inlet, as a community service project. This is in keeping with the City's objectives to preserve Royal Australian Navy heritage, enhance public interest in maritime history, and to provide a tourist attraction and educational facility.

Last of the Fremantles bow out

The RAN's last two Fremantle class patrol boats were decommissioned on Friday 11 May 2007. HMA Ship's TOWNSVILLE and IPSWICH were the last of the Fremantles and decommissioned in their homeport of Cairns after a combined 50 years of service to the Navy.

Both ship's Australian White Ensign were lowered for the last time and handed to the respective Commanding Officers. In attendance was the Parliamentary Secretary to the Minister for Defence, Mr Peter Lindsay MP, Chief of Navy, Vice Admiral Russ Shalders and the Commander Australian Fleet, Rear Admiral Davyd Thomas.

"The dual decommissioning of TOWNSVILLE and IPSWICH represents the end of an era. The introduction of the next generation Armidale class patrol boats will continue their roles and outstanding service," said Rear Admiral Thomas.

TOWNSVILLE and IPSWICH were the 3rd and 7th of 15 Fremantle class patrol boats. Both ships were commissioned at Cairns – TOWNSVILLE on July 18, 1981 and IPSWICH on November 13, 1982.

"IPSWICH has provided valuable and reliable service for 25 years. The current crew and myself are proud to say we have been a part of her history. The decommissioning of the last Fremantle is a sad occasion for the host of personnel who have served in them over the last 27 years," said Commanding Officer of HMAS IPSWICH, Lieutenant Commander Darren Grogan.

IPSWICH will to be delivered to the disposal contractor Birdon Marine in Darwin. Her future will be determined by the contractor.

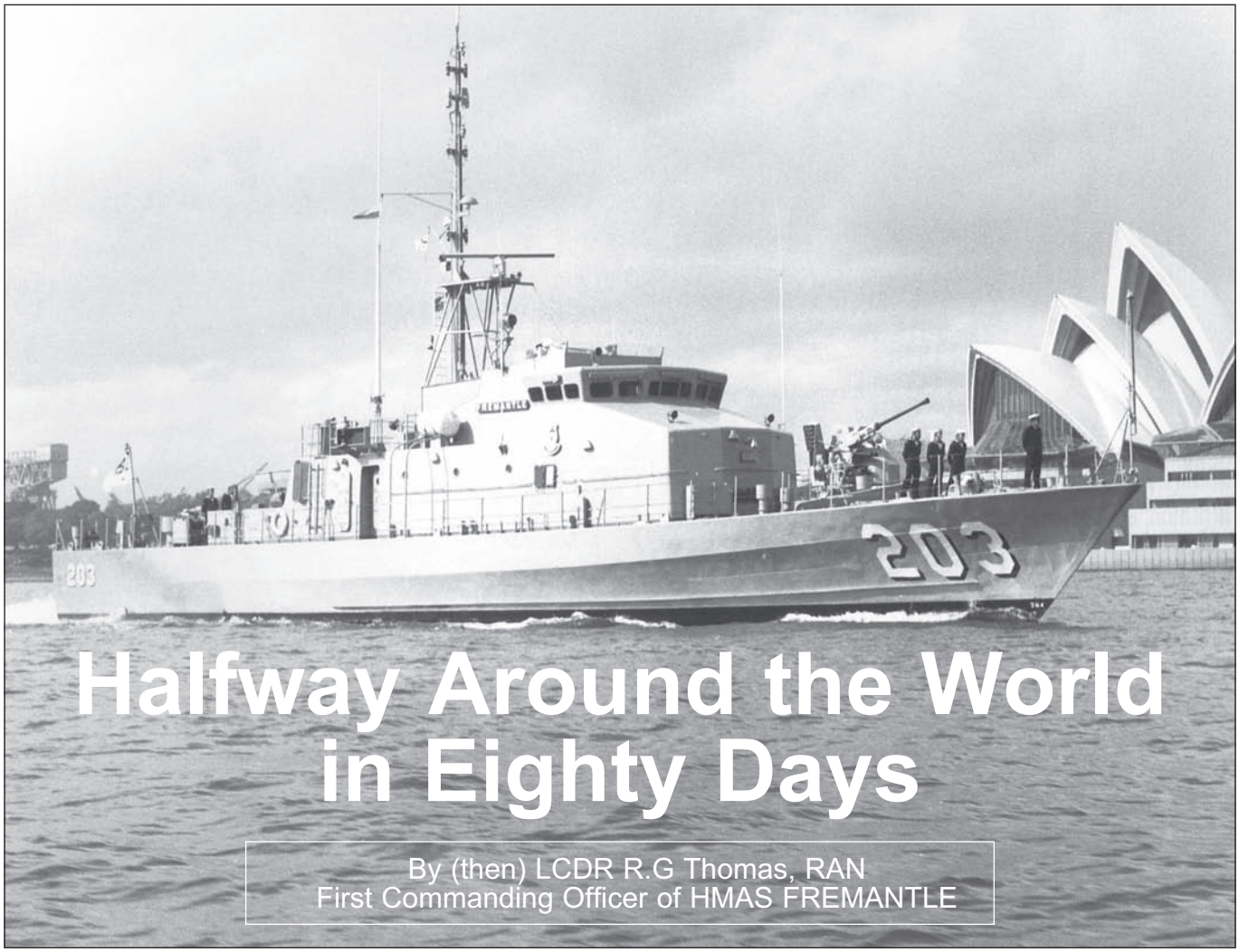
"TOWNSVILLE has always been based in Cairns and has strong bonds to the community here. After almost 26 years and in excess of 680,000 miles steamed, her legacy will be great memories and friendship. Being the last of the class is particularly poignant and the decommissioning closes a significant chapter of the RAN's history," said Commanding Officer of HMAS TOWNSVILLE, Lieutenant Commander Andrew Hawke.

Even though the Fremantles have completed official service they will still live on through Channel 9's new television series 'Sea Patrol', featuring IPSWICH as the patrol boat HMAS HAMMERSLEY.

HMAS TOWNSVILLE will also live on after being gifted to the Townsville Maritime Historical Society. The gift is in order to preserve the cultural heritage that the city of Townsville shares with the Royal Australian Navy and the Defence community.

The Defence Minister, Dr Brendan Nelson MP, has invited the Townsville Maritime Historical Society to enter into a deed of gift that will preserve and exhibit the vessel as a display in a dry-dock facility next to Ross Creek at the Maritime Museum of Townsville.

The White Ensigns that flew proudly over HMA Ships IPSWICH and TOWNSVILLE are lowered for the last time. (RAN)



Halfway Around the World in Eighty Days

By (then) LCDR R.G Thomas, RAN
First Commanding Officer of HMAS FREMANTLE

HMAS FREMANTLE arriving in Sydney Harbour for the first time on 27 August 1981. (RAN)

To mark the decommissioning of the last Fremantle class patrol boat *THE NAVY* is proud to reprint an article from its April 1981 edition on the class's lead ship delivery voyage from the UK.

HMAS FREMANTLE arrived in Sydney on 27 August last year (1980) to a hot reception from the media, controversy had arisen over the ship's overweight problem and appeared to be the main concern of the Press representatives.

The fact that the ship had just completed what is claimed to be the longest solo passage by any patrol boat seemed to escape recognition. The overweight problem was always more significant in terms of contractual specifications than it was in terms of operational performance.

The Fremantle class were chosen as replacements to provide substantial improvements in endurance, sea-keeping, and habitability over the ageing Attack class ships in service. What better could there have been of proving the qualities of this new class than for FREMANTLE to sail from the United Kingdom to Australia. Despite the obvious advantages of such a proving run for the first of class, the decision for FREMANTLE to steam to Australia was not taken lightly. Patrol Boats built by Brooke Marine Ltd for the Royal New Zealand and Omani Navies had made their delivery voyages as deck cargo on a heavy lift ship and such an option obviated much of the administrative effort required to sail a small warship half-way around the world. However, the issue was decided by the desire of the RAN to learn as much as possible about their new PTF as soon as possible, and the unsettling loss of a newly refitted Omani guided missile patrol boat over the side of a heavy lift ship during a storm in the Bay of Biscay.

In March, 1979, alternative passage plans east and west were presented to the Australian Naval Representative in London, and the less enticing but more prudent "east via Suez" plan was duly submitted to Canberra for approval. At that stage the Arab-Israeli conflict was still smouldering and a delivery voyage via the Panama Canal and spiced with port visits such as Bermuda, Acapuico, San Francisco, and Pearl Harbour seemed a likely event. But, although a lot was to change in world affairs and the completion of the ship at Lowestoft in the ensuing 15 months, the way home didn't and on Saturday, 7th June, 1980, FREMANTLE sailed from what had seemed her permanent home in Lowestoft on passage to Sydney. East Anglia produced some rare blue sky for the ship's departure, perhaps in an effort to lure her back but it was a final parting.

Passage of the Channel and South West Approaches was made in excellent weather with super-refractive atmospheric conditions providing an amazing radar picture

of the English Coast from Great Yarmouth to Dover and the coast of the continent from Zeebrugge to Calais, with all contacts therein. The second day dawned on a flat calm sea and Ushant was rounded into an unusually calm Bay of Biscay. The area's well-known reputation was restored by a freshening south-westerly wind in the afternoon which reached Force 6 and gave FREMANTLE an uncomfortable 24 hours until past Cap Finisterre.

The remainder of the passage to Gibraltar was thankfully uneventful.

The all too short day visit to Gibraltar was followed by a weekend visit to Cagliari in southern Sardinia. A brief spell of steep head seas was encountered before arrival at Cagliari and this necessitated delaying the ETA two hours – the only late arrival of the trip. For the remainder of the ship's time in the Mediterranean the weather was idyllic and the passage from Cagliari through the Straits of Messina and Western Greek Islands provided a most memorable highlight to the trip. During this time the opportunity was taken to allow the hands to bathe over the side on three occasions. The ship's transit of the Corinth Canal at first light on the day of arrival at Piraeus was a spectacular event which delighted the amateur photographers among the ship's company.

If the weather up until Suez had seemed a little too good to be real, the conditions changed for the worse from then onwards. Continual overcast and light to fresh north-westerly winds persisted throughout the transit of the Red Sea. Daily temperatures varied between 27° to 32°C and the humidity was oppressive. The ship's company was glad of the effective air-conditioning but the cool interior conditions did have their drawbacks. Overnight the condensation on the bridge windows necessitated operating the windscreen wipers continually to maintain clear visibility for the Officer of the Watch. The Navigating Officer's sextant telescope also lacked an effective demister. To add to the climatic assault, a sandstorm was encountered at sea and the ship had a distinctly two-tone appearance by her arrival in Djibouti to fuel on 2nd July, 1980. The starboard side of the mast and superstructure was brown from the caked dust.

From the ship's departure from Djibouti until her arrival in Singapore, the ubiquitous south-west monsoon made the passage via Bandar Jissah (Oman), Karachi, Marmagao (Goa), and Colombo less than pleasant and, at times, decidedly difficult.

The winds which never eased to less than 15 knots and occasionally gusted to 40 knots in squalls created a long, large swell of 15 to 25 feet which followed the ship ceaselessly. During this portion of the voyage FREMANTLE joined a Royal Naval Task Group transiting the area and received some welcome assistance in the way of fresh bread, news bulletins, and movies. Manoeuvring for station-keeping during those weeks was more akin to surfboard riding than shipbuilding.

The ship and her company were well in need of the seven-day maintenance period in Singapore at the end of July. Our arrival at Johore Shoal Buoy was greeted by HMA ships BRISBANE and SWAN. The ship was in familiar territory at last. If hopes were held for some calm equatorial sailing through the Indonesian Archipelago, they were quickly shattered a day out of Singapore, when the sonsoon's antipodean relative the CE Trades took over the task of constant companion. Fortunately, the head seas were not of the same magnitude as those which followed the ship in the northern hemisphere and conditions were no more than uncomfortable. FREMANTLE arrived in Darwin to a gratifying warm welcome on 11 August, having called at Surabaya en route from Singapore. The passage from Darwin to Cairns was made against some uncomfortably strong south-easterly winds. The strong high pressure system over South Australia caused a deep low in FREMANTLE's morale. During the five-day visit to Cairns engineers from North Queensland Engineers and Agents (who were building the follow-on ships) scrutinised every part of the FREMANTLE seeking apparent confirmation of ideas or how some difficult constructional aspect was overcome in the prototype.

Whatever the attractions of northern Australia or sunny Queensland, the day every member of the ship's company had awaited since February finally arrived on 27th August, 1980, when FREMANTLE entered Sydney Harbour at 0915 escorted by HMA ships IBIS, SNIPE, and BOMBARD. The trip from Lowestoft to Sydney of 14,509 nautical miles had been completed to programme in 80 days at an average passage speed of 13 knots. No significant defects occurred during the passage and opportunities were taken to prove all systems. The ship's company had lived onboard for five and a half months without any undue effect on morale or health.

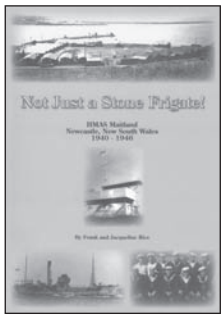
FREMANTLE is a prototype and undoubtedly her Australian built sisters will benefit from the vast amount of experience gained from her passage to Australia.

(Reprinted from *THE NAVY* pp2-3 April 1981)

HMAS FREMANTLE in Sydney Harbour on 27 August 1981 after her mammoth delivery voyage from the UK. It is interesting to note that media controversy surrounded the new patrol boat project. Just like every new defence project today. (Brian Morrison, Warships & Marine Corps Museum, Franklin, Tas)

PRODUCT REVIEW

Not Just a Stone Frigate! HMAS MAITLAND, Newcastle NSW 1940-46



126 pages, B&W, paperback
By Frank and Jacqueline Rice
2006
ISBN 9780980286700
$29.

A recently completed history of HMAS MAITLAND (I), which was an important shore establishment in Newcastle during WWII, is now available from the authors.

The book contains a wealth of information and images from HMAS MAITLAND's (I) World War II history.

The name of the book *'Not Just a Stone Frigate – HMAS MAITLAND, Newcastle NSW 1940-46'* was chosen as HMAS MAITLAND (I) was an important part of Newcastle harbour's defence, shipbuilding and repair facilities, heavy industry; as well as an important component of the protection and movement of ships up and down the coast during the war.

'Not Just a Stone Frigate – HMAS MAITLAND, Newcastle NSW 1940-46' covers a lesser known part of the RAN's and Newcastle's history. Indications are that the majority of people in Newcastle (and Australia), even RAN historians, did not know of the existence of HMAS MAITLAND (I) in Newcastle.

The book contains the history of HMAS MAITLAND (I) which had a number of areas of operation scattered around Newcastle, as well as stories and photos from the surviving veterans (and families of deceased veterans) that have never been published before.

The authors, Frank and Jacqueline Rice, took on the research and writing of this book as a community project and self published it. Jacqueline Rice was actually the commissioning lady for HMAS MAITLAND (II) an Armidale class patrol boat. Both authors found that very little information existed on the original HMAS MAITLAND (I) and decided to do something about it.

The shore establishment MAITLAND was named as the Royal Navy already had a ship called HMS NEWCASTLE, and so to avoid confusion the shore establishment was named MAITLAND.

The original intention was to only produce a small number of books to be given to the ship, the RAN's Historical Section, Newcastle and Maitland Libraries, and some veterans of HMAS MAITLAND (I). However, as their research progressed interest in the book grew resulting in a decision to publish a greater number of books which would be made available for interested parties to purchase.

A copy of the book was presented to the new patrol boat HMAS MAITLAND (II) at her recent commissioning in Newcastle harbour (see *THE NAVY* Vol 69 No.1, *HATCH, MATCH & DISPATCH*) so that the crew would have a greater understanding of the history behind the name HMAS MAITLAND (I).

The book was launched at the Maitland Town Hall on Friday 1st December, 2006; and at the Naval Cadet unit T.S. TOBRUK (which was itself part of the shore establishment HMAS MAITLAND (I)) on Saturday 2nd December 2006.

Copies of the book were presented to the Lord Mayor of Newcastle, the Mayor of Maitland, the local history sections of Maitland and Newcastle Libraries, the Newcastle Maritime Museum, the Fort Scratchley Historical Society, T.S. TOBRUK, Newcastle Naval Association and the veterans of HMAS MAITLAND (I).

As the book is self published, copies can be obtained directly from the authors at $29 (which includes $5 postage and packaging). Orders can be made through the following means:

F & J Rice
20 Charlton Street,
Eleebana NSW 2282
Phone: (02) 4848-7419
E-mail: fjrice@idl.net.au
Or from the Australian War Memorial Book Shop in Canberra at a similar price.

Inside the Danger Zone: The U.S. Military in the Persian Gulf, 1987-1988

By Harold Lee Wise
Hardcover: 272 pages
Publisher: US Naval Institute Press (May 8, 2007)
ISBN-10: 1591149703
ISBN-13: 978-1591149705
Reviewed by Steve Bennet

Inside the Danger Zone is a remarkable tale of the last time the USN actually fought a maritime war. While both Gulf Wars against Iraq had maritime components, they were nothing like the 1987-88 stand-off and conflict between the US and Iran in the waters of the Persian Gulf. The book is illuminating for the events it describes such as the USS STARK and Iranian airbus shooting down incidents. It also describes some of the mine warfare aspects and the lack of adequate mine hunting capability in the USN's inventory.

During the Iran Iraq war the land battle reached a stalemate. Both sides then tried to extend the battlefield to the waters of the Persian Gulf to inflict economic damage to each sides oil export interests. It was during this time the USN started to escort ships in the Gulf to protect them against the waring sides. As a result of being in the firing line an Iraqi plane fired two Exocet missiles into the FFG USS STARK, a lone USN frigate on patrol in the Persian Gulf. One missile exploded, the other failed to. Both missiles nonetheless severely damaged STARK and killed 37 sailors. This attack, which Iraq claimed was accidental, brought heightened attention to the Persian Gulf war and heralded the beginning of a new era in US Middle Eastern policy.

From then until the end of the Iran-Iraq War, American forces carried out an unprecedented series of military operations in the Gulf. The planned tanker protection mission evolved into a naval quasi-war with Iran and culminated in the largest US sea-air battle since World War II.

Inside the Danger Zone is a history of US military involvement in the Persian Gulf in 1987 and 1988 – a time of burning ships, air strikes, and secret missions – the prelude to the Iraqi invasion of Kuwait, Desert Storm, and the most recent US invasion of Iraq. Based largely on first-hand accounts from, it is an up-close, detailed report from the front lines of a guerrilla war at sea. Many of the dramatic incidents of this period are told in depth, with new information and details never before seen in print. It is quite remarkable to see how much ordnance was expended by the USN during the period. For instance, one small Iranian corvette was the recipient of three Harpoons and two 1,200lb laser guided bombs.

Inside the Danger Zone is vital reading for those interested in how the USN might fight in the future, and how Iran may operate against allied forces in the Gulf. Of course Iran hasn't given up its naval guerrilla warfare tactics with 15 crew members of the British frigate HMS CORNWALL recently hijacked at sea while on a UN mission.

The Author, Harold Lee Wise, is an adjunct history professor at Elizabeth City State University in North Carolina. His thesis topic was the Iraqi attack on USS STARK. An early draft of the thesis won the Ben H. Powell writing award at Sam Houston State. He is a frequent contributor to military history encyclopaedias.

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.

HMAS ANZAC departing Fleet Base West in WA on 5 June 2007 for her deployment to the Persian Gulf. (RAN)

HMAS MELBOURNE departing Sydney for Sea Trials after emerging from her upgrade. The most noticeable part of the upgrade is the small box house on the bow just forward of the Mk-13 missile launcher. This small box houses an 8-cell Mk-41 VLS for 32 ESSM (Evolved Sea Sparrow Missiles). (Chris Sattler)

The USMC's MV-22 Osprey tilt-rotor aircraft. A squadron of MV-22 are due to deploy to Iraq by the end of the year, marking this their first operational deployment. (USN)

The Nimitz class aircraft carrier USS THEODORE ROOSEVELT being manoeuvred down the Elizabeth River, in Norfolk Virginia, for a major maintenance period. (USN)