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Charge of the
Indian Ocean

Australia's Maritime
Doctrine - Part 5

VSTOL

Australia's Leading Naval Magazine Since 1938
THE NAVY

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or worse, the Navy receives a fair share of publicity (at times among those ashore, in particular in the upper echelons of the service, to say nothing of the public). In the course of brief communications the problem seems to continue in our Defence Department.

The Defence Department spends quite a lot of money on publicity and creating a favourable impression; however, one relatively small incident that happens to attract media attention can create impressions in the public mind no amount of money can buy.

As often as not and no matter how short the chain, the message was quite different to that which was to pass a simple message via a chain of messengers. As often as not and no matter how short the chain, the message was quite different to that which was to pass a simple message via a chain of messengers.

By Geoff Evans

The Battleships Giveaway

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The concept of producing a practical, winged, aircraft able to use aerodynamic lift for flight, yet capable of Vertical Take Off and Landing (VTOL), has fascinated designers since the dawn of powered flight. Whilst helicopters have achieved it, their fixed wing cousins have not, to anything like the same degree.

During World War II, the Germans produced a VTO (no 'L' because it did not land) 'target defence interceptor' called the Bachem BA 349 'Natter'. It was powered by a single Walter HWK 109 rocket motor augmented by four boosters and launched vertically up a raised structure 80 feet high. It had a rate of climb in excess of 35,000 feet per minute but a powered endurance of only two minutes. As a result, a 'manned missile' intended to intercept daylight bombing raids. It was armed with 35 Type R4M unguided rocket projectiles in the nose and, as soon as he had fired them, the pilot ejected himself and the rocket motor for parachute descent. While the remaining wooden airframe structure crashed to the ground. Ten were deployed to Kirchein on Teck in April 1945 but the war ended before they could be used operationally.

The "Natter" was a weapon of desperation but, no doubt stimulated by it, the Admiralty wrote a more rational specification in 1945 for a "quick reaction" fighter capable of countering Kamikaze aircraft. The Fairey Aviation Company sketched a design for a small, turbojet powered, delta winged "tail sitter" that achieved VTO by being boosted up rails fixed to a corner of a flight deck. It would have landed 'more or less' conventionally. The end of the war against Japan took the urgency out of the requirement but it continued as a post war research project with some interest from the RN and RAF. A number of scale models were launched vertically from a rail structure at WRE Woomera. There was some USN interest in turbojet powered 'tail sitter' aircraft in the USA at the same time but those, too, came to nothing and the concept proved to be a dead end.

High speed research studies carried out at the Royal Aircraft Establishment, Farnborough, in the late 1940s led scientists to predict that future supersonic aircraft would need wings so small that conventional take off and landing on flight decks would not be possible. Thus, they believed VTOL would be inevitable for future generations of fast jets because there was no other way of operating them. The concept had something to do with simplified deck operations or improving rough sea landing capability.

By 1954, the Admiralty's Construction Department had prepared plans for a light fleet carrier capable of operating the new Supermarine Sea Harrier. The concept had something to do with simplified deck operations or improving rough sea landing capability.

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been expensive and very specialised. Sir Sydney Camm, in cruising flight. This would have led to a payload
however, it would have had a poor Specific Fuel Consumption
NBMR 3 but only Britain put design effort into NBMR 4.
but it would have been supersonic at height and would have
certainly land vertically and with a form of reheat* known as
of lift and thrust jets fitted in the rival designs. It could
developed from the Pegasus, with rotating nozzles giving a far
in the field. Both completely underestimated the logistic-
transport aircraft in the C-130 class able to support NBMR 3
1154. It was more capable than the NBMR had demanded and
its strike force.
significantly, the RAF ordered 200 of the cheaper but more
operational merit in the latter, it is difficult not to believe that the
represented. When the squadron disbanded, six of the eight
Whitworth Type 681 was also cancelled.
artillery fire in addition to missile and air attack. In hardened
support. On the ground, near the FEBA, aircraft and the
decision to focus on a strike capability that was best provided
rather than the operational effect it was intended to create is
wartime. VTOL aircraft or helicopters. Design work started on a
conventional carrier force. He focused attention on a future
maintaining any sort of fighter aircraft in ships at sea. The
potential to embark Harriers superior, even for the operation of a modest number of
fighters that it was adopted. The ability to embark Harriers
was obvious and, from the outset, was a factor in the design of
what became the Invincible class.

IN retrospect, this British fantasy with the platform,
both the political issues at stake, it named the British and French entries as "joint
technical winners" and left the various governments to make
the solution. Sensitive to the political issues at stake, it named the British and French entries as "joint
technical winners" and left the various governments to make
of that they would.

In 1961, the British concept had evolved into a practical
strike fighter. It was the Hawker P.1154 prototype.
more than the NBMR had demanded and to have a single Bristol Siddeley BS 100 engine,
developed from the Pegasus, with rotating nozzles giving a far
more elegant solution to the VTOL problem that the batteries of lift and thrust jets fitted in the rival designs. It could
be landed and vertically and with a form of reheat* known as
"plenum chamber burning". It was capable of VTOL with a
military loadout for a few minutes endurance. It did much
better with a short take off run, however, and was better
referred to as a Vertical/Short Take Off and Landing (VSTOL)
aircraft. It would have been expensive to develop and operate but it might be
considered to have been a practical solution to the problem that emerged
and which had an aviation facility which grew from a single
post for a helicopter aft to a runway running the length of
The Paper compares two weapon effort planning scenarios, sinking a destroyer sized contact and destroying a
bridge. Different parameters were used, some favouring the
Kestrel, some the Jaguar. On average, it was evaluated that 12
Kestrels would be equal to 20 of the same Jaguar and Kestrels and there are tasks that the latter could do that the former
could not. Thus cost factors of 96 against 40 were given making the
Kestrel somewhat more attractive. The larger number of Kestrels need a large ship from which to operate but it would be a simple VSTOL carrier. There is
therefore, a cost penalty of building the VSTOL capability
into every aircraft rather than the simple ship from which they operate. Taking the CTOL (Controlled Take Off and Landing)
comparison further, the paper examines the cost of putting VSTOL capability back into the carrier. It uses prices
comparable to half the cost of a Jaguar for each catapult and the
cost of a whole Jaguar for the arresting gear system. For the
Hermes sized ship with two catapults and arresting wires, this
modified the cost factors to 96 against 50. It is still nearly
twice as expensive to procure the less capable VSTOL
aircraft and the "cheap ship" has been "bought" by expenditure on
an expensive but less capable aircraft. The numbers may vary,
but these factors still hold good for today's Joint Strike
Fighter where comparisons show that the USN's carrier
version is cheaper but goes further with more weapons than
the VSTOL version. The British made the biased decision to
take VSTOL to sea was politically rather than capability
based.
Sea Harriers began to enter front line service with the RN in 1980. Although not as a conventional carrier aircraft, it was immediately apparent that they were more effective in their mobile base than the discredited dispersed operations had been advised. The new aircraft's Release to Service was limited at first by the novelty of its deck operation and weapons system. It was still being expended five years later. In addition to INVINCIBLE, the former CVA 011 HMS HERMES was modified to operate Sea Harriers from 1981 onwards.

Fitters embarked in these two ships were fundamental to the British plans to liberate the Falkland Islands after their seizure by Argentine forces in 1982. 28 out of RN's total of 32 Sea Harriers were deployed in four Naval Air Squadrons, one of which was formed at short notice. They flew 2,000 operational sorties and achieved 32 confirmed kills of enemy aircraft in air to air engagements. They also carried out successful strikes against enemy shipping and shore targets. None were lost in air but two were lost to ground fire and others not recovered. An overall survival rate in excess of 99% was achieved.

This performance surprised many outside the RN and was sufficient to convince Argentine air forces from the amphibious landing. However, with the comparison with the air defence system the Service had wanted but lost with the cancellation of the FFA-01 replacement carrier project, the performance fell short of the optimum. Enemy aircraft and missiles were able to penetrate the defences and inflict heavy casualties in ships and lives. This was predictable due to the lack of embarked Airborne Early Warning (AEW) aircraft and shortcomings in Sea Harrier performance and armament. With only a basic pulse radar, no Beyond Visual Range (BVR) weapon, no high speed data to gain position and no embarked tanker aircraft to sustain them on CAP (Combat Air Patrol) or track flexibility in recovery. The Sea Harrier was marked inferior to the aircraft it replaced.

It did well because of the highly skilled pilots available from previous conventional carrier operations, many of which were instructors with thousands of flying hours. It also had a very good weapon in the newly supplied American AIM-9L Sidewinder and an excellent landing capability in high sea states that caused excessive ship motion. Although rated as a Fighter/Reconnaissance/Strike aircraft, the FRS-1 Sea Harrier could hardly be compared with USN carrier aircraft in the last two roles and relied on above average pilot skill in the first to command success. In 1982 that level of skill was available.

Given this very public success, hopes for export sales rose and several nations bought Sea Harrier or AV-8 derivatives but only in small numbers. They include India (32 plus 4 trainers). Spain (32 plus 3 trainers), Italy (16 plus 2 trainers), and Thailand (17 plus 2 trainers purchased from Spain second hand). Total P1/272 Harrier/Sea Harrier/AV-8 production has amounted to 15 prototypes, 237 first generation single seaters, 26 Sea Harriers, 395 AV-8B second generation single seater and 86 trainers of all versions.

By the 1990s, the Sea Harrier FRS-1's capability as a fighter was becoming marginal and replacement with the F/A-20 was timely. This has the Blue Violet pulse doppler radar, track-while-scan capability and up to four AMRAAM missiles constituting one of the West's best fire control systems, albeit fitted in a 40 year old airframe design. Even with this upgrade, it faces tough opposition in many areas of potential conflict. Hence "A" indicates a limited attack capability giving this improved version a limited swing in performance.

Given this background, we have to answer several key questions before deciding whether VISTOL was a good idea for the RN.

Q: Was VISTOL inevitable?

A: Advances in wing design made it possible to produce very successful fast jets that could land on carriers conventionally. The RAE scientists were right, it was not, therefore, inevitable.

Q: Was VISTOL ever viable for the USN?

A: The USN considered and rejected it. It did not accept the concept in operation initially by that VISTOL, brought with it. Even today, the USN will not accept the VISTOL version of the Joint Strike Fighter, which is being considered for the USMC.

Q: Who did the USMC opt for it?

A: It wanted a specific aircraft to support amphibious landings, moving ashore with the marines. Almost as important, it wanted that this could not be used for general fighter duties by the USN in a carrier battle group.

Q: Was it the best fighter that the RN could buy?

A: No, but it was the only aircraft that the British Government of the day, which cared little for cost effectiveness or capability issues, would allow it to buy. In political terms, it was the only fighter that could be operated at sea once the mistake had been made of ordering ships of such limited capability as the Invincible class. In naval terms it was not one brought up to the ability that could be operated from a ship of the size the RN had planned to procure.

With the introduction of simple carriers and their limited AAF-84 AV-8B Harrier II from the flight deck of USS BATAAN (LHD-5) for a mission supporting Special Forces operations in the Horn of Africa, including deadly attacks on terrorist sites (Guard Guided Bombs) and a Sub-sounder AAM for self protection. The Harrier has become a long way from the P1127 (TSN)
The Delhi Class
Scourge of the Indian Ocean

Mumbai's visit was timed as part of the Centenary Naval Review that was to be held in Sydney in early October 2001 before world events, and the possible commitment of the RAN in military action, forced the review's cancellation. The officers and crew of Mumbai were disappointed with the event's cancellation, yet were happy that their 2001 goodwill cruise would continue, even with events near India escalating towards war.

Mumbai is assigned to the IN's (Indian Navy)'s Western Command and is based in Mumbai (formerly known as Bombay). This was her first overseas cruise since Bombay. The IN, once a nation that relied on the UK and then the Soviet Union for ship designs, began to design a warship from scratch in the early 1970s. After the success of the six-ship Godavari class frigate program, the IN began to plan for a destroyer size ship to be built at the Mazagon Dockyards in Mumbai.

THE CLASS

Known by the IN as Project 15, the first of the class, INS Delhi (D-61) was laid down at the Mazagon Dockyard on 14 November 1986. The class are the largest warships built in India, yet as the project continued, delays began to occur as the Soviet Union, who was providing technical assistance as well as the weapons suite, began to collapse. When the Soviet Union finally dissolved in 1991, the Delhi class were already far behind schedule as the supply system from Russia failed. It would be another six years before supply problems were fixed and INS Delhi outfitted enough to begin sea trials in 1997. Her two sister ships, Mysore and Bombay (whose name was changed to Mumbai in 1999) were also delayed due to these problems. INS Delhi (D-61) was finally commissioned on 15 November 1997, with Mysore (D-60) following on 02 June 1999 (after modifications from the lessons learnt from Delhi's construction) and Mumbai commissioning in Mumbai on 22 January 2001.

The Delhi class were designed as multi-role ships that could operate both individually and with a balanced weapons outfit to handle surface, sub-surface or air threats.

DESIGN

The Delhi class design, which Russia's Severnoye Design Bureau assisted as a consultant, is described as a stretched Rajput (Kashin-II) with Godavari features, Because of the delays in building the Delhi class, design advances such as stealth were seen as too costly for the first three ships. It is hoped to incorporate these into the follow on class known as Project 15A.

Mumbai's displacement is between 6,700 standard to 8,000 tons fully loaded, and is 163 metres long. These vessels are fitted for use as flagships and can accommodate an Admiral with staff.

The 320 crew live in quarters comparable to the RAN's. The Delhi class are fitted for use as flagships and can accommodate an Admiral with staff.

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During the Second World War before returning to India, formally known as BOMBAY. The eighth MUMBAI was an armament Indian Sea King helicopters are also listed to fire operate either the light Alouette helicopter or the heavier and serving until 1960. HMINS BOMBAY (J 249) which operated out of Sydney Australian built Bathurst class corvette commissioned as Samahe helicopter handling/landing system. The class can hangers, and a large flight deck is equipped with the French ship’s Bharat IPN Shikari (IPN 10) Combat Data System, the Bharat Ajanta FSM system as well as the Kllectronica and the PTA 533 torpedo tube launchers are controlled by the Parga ASW system. The Electronics Warfare suite of the Delhi class consists of the Bharat Ajaanta ESM system as well as the Elfelectronica TQN 2 jammer pods. The ship also has two PK 2 chuff launchers mounted alongside the aft ASM launcher. All sensors and weapons are controlled throughout the ship’s Bharat IPN Shikari (IPN 10) Combat Data System, wholly designed in India.

AIR OPERATIONS

The Delhi class carries two helicopters located in two hangars aft. The air traffic control booth is located between the hangars, and a large flight deck is equipped with the French Saumur helicopter handling/landing system. The class can operate either the light Alouette helicopter or the heavier and much more capable Sea King. Apart from the standard ASM armament Indian Sea King helicopters are also fitted to fire the impressive British made Sea Eagle ASM.

HISTORY

MUMBAI is the ninth ship to be named after the city formally known as ROSTHAVAY. The eighth MUMBAI was an Australian built Bathurst class corvette commissioned as DIMAINS BOMBAH (J 249) which operated out of Sydney during the Second World War before returning to India, serving until 1960.

CONCLUSION

MUMBAI is a most impressive warship, with a first class weapons and sensor suite. For a second attempt at building their own destroyers, the Indians have produced a better than average warship. They have learnt the lessons from this class for their new Project 15A ships already in the early stages of development at the Mazagon Dockyard in Mumbai.

Chapter 7

MARITIME OPERATIONS

THE SPAN OF MARITIME OPERATIONS

Maritime forces possess considerable utility in a wide range of situations that span not only the spectrum of conflict, but also much peaceful human activity. Contemporary strategic thinkers, notably Ken Booth, have suggested that the roles of maritime forces in this context fall into one of three categories: military (or combat related), diplomatic (or foreign policy related) and policing (or constabulary). The Royal Navy makes the distinction in a slightly different fashion, dividing the roles of maritime forces into military, constabulary and benign. In Australian Joint doctrine, the distinction is drawn in a third way, between combat operations, military support operations and shaping activities. However, when discussing maritime activities, the idea of constabulary operations is particularly valuable because it emphasises the historically close and continuing relationship between maritime forces and domestic and international law enforcement. The differentiated category of benign roles within diplomatic operations is also important in comprehending just how flexible Navies can be.

The ability of maritime forces to undertake constabulary and diplomatic operations depends substantially on their ability to carry out their combat roles. The capability to do these things is thus largely a by-product of the resources and core skills developed for warfighting.
**Containment by Distraction**

By threatening an adversary's critical vulnerabilities it is possible to force the diversion of his maritime forces into defensive roles, thus preventing their use for the offensive.

**Combat Operations in Defence of Shipping**

The basis by which shipping can be protected is either by defending an area or by defending the ships themselves. Both methods are valid in particular circumstances, but the complexity of the maritime environment means that area operations must be approached with particular caution because they carry the risk of placing too many demands on sensor systems and allowing the adversary to achieve surprise in its attacks.

**Barrier Operations and Defended Areas**

Barrier operations may be conducted in situations in which geography and oceanography combine to create a focal area that can be closed to the adversary. Similarly, the requirement to concentrate assets in one particular locality may mean that defended area operations are the most effective method for their protection. Generally defence in depth is the most effective approach to the problem, with units allocated areas based on the ability of their sensors and weapons to contribute to the force. Defensive minefields can be a particularly effective mechanism for achieving the aim.

**Cover**

Cover is defined as the provision of support for ships capable forces to ensure their protection and the completion of their task without interference from an adversary. This may require the deployment of covering forces in the proximity of the units requiring protection, but, given appropriate capabilities, cover may be effectively exercised through the simple threat of intervention. This is particularly applicable to situations in which it is desirable to contain the intensity or branching of a conflict. An adequate degree of cover in such circumstances can be an important deterrent of a would-be adversary and will ensure that the situation will not escalate. Cover is a concept which transcends environments and one of the most important services which different force elements can provide for others at their points of greatest vulnerability.

**Interdiction of Commercial Shipping and Sealift**

Combat operations are conducted against adversary shipping for either strategic or tactical purposes. Maritime forces may be used to interdict and destroy shipping, to deny the adversary access to vital supplies and to block the movement of troops, goods or ideas. The insertion of a smaller force for a particular and specific purpose may mean that the advantages of the delivery system can be exploited. Interdicting shipping is a means of denying the adversary access to resources and can be particularly effective when directed against the adversary's lines of communication and supply. The insertion of a small force for a specific purpose is best achieved by utilising maritime forces, but operations of this nature are frequently conducted by non-military forces.

**Maritime Mobility**

Interdiction of an adversary's maritime forces, to prevent their use for sea denial, sea control or power projection, can be conducted from the sea or from the land and can be directed against targets at sea or on shore. Strike assets in the form of submarines or attack aircraft will be the most common platforms employed for interdiction, but surface combatants, helicopters and maritime patrol aircraft can also be utilized to fix, attack and transport troops or mobile forces. Surface combatants with medium calibre guns possess a limited capability to conduct bombardment. The development of extended range guided munitions and ship and submarine home land attack missiles is likely to increase the potential for these operations in the future.

**Amphibious Operations**

Amphibious operations seek to exploit the superior mobility of the sea land as well as their ability to transport mass. They may be used to contribute to the campaign by interdicting the adversary's vulnerabilities on land, by seizing an objective, conducting a turning movement to expose a vulnerable flank or, on a smaller scale, by infiltrating forces to interfere with the adversary's lines of communication. Not all amphibious operations are conducted by surface forces. Submarines can be particularly useful for covert insertions and extractions of Special Forces.

Amphibious forces can be particularly effective when conducting amphibious demonstration. They may tie down much larger numbers of land-based forces by threatening but not conducting a landing. This utilises the inherent capabilities of ships to project and be persistent and thus achieves disruption of the adversary.

The principal stages of an amphibious operation normally begin with the advance force or pre-assault operations by maritime forces already discussed. They may also include the landing of small numbers of personnel to conduct reconnaissance and reconnoiter. The requirement is for the advance force to seize one or more landing points and secure an objective. Whether land forces seek to move out from that objective will depend upon the aim of the operation.
Support to Operations on Land

Australia’s naval forces do not possess the organic air capability to project forces on land; they nevertheless have considerable potential to contribute to combat operations throughout the battle space. Medium-calibre guns in surface combatants can be used for naval surface fire support or shore bombardment operations, while surface warships, helicopters and organic aircraft can be used to contribute to anti-air operations over the coast. This will be particularly useful if it can be integrated with air forces early warning and control and fighter aircraft, or with land-based sensors and weapons. Army battlefield helicopters (organic to the amphibious task group) and naval utility helicopters can provide extensive support in operations on land. In order to do this, navies must ensure that the adversary moving forces by sea. This protects the South flank of friendly land forces and denies the adversary the ability to conduct maritime manoeuvre.

SHAPING OPERATIONS

Shaping operations can also be described as naval diplomacy or the use of maritime forces in support of foreign policy. Some of the activities that fall under this heading include constabulary or benign operations. There are, however, significant elements that rely directly upon the inherent combat capabilities of maritime forces and are diplomatic in their intent. That is, their activities are designed to influence the policies and actions of other nation states. One important aim is to develop the conditions which will allow the success of subsequent operations in land. Many of the inherent characteristics of maritime forces described in Chapter Six (see THE NAVY, Vol 63, No 2) are attributes that make maritime forces the instruments of first resort for governments in particular when the success of the conflict depends, fundamentally, upon credible combat power. Maritime forces, in their own right, are a potent instrument of diplomacy.

Presence

Presence is the term used to describe the operations of maritime forces in areas of strategic significance that are intended to convey an interest. These may involve simple passage or a show of force or existing naval deployments represent perhaps the most sophisticated manifestations of particular societies and are thus unique symbols of a nation’s identity. The influence of presence derives directly from such features as the capability to deter, to impress and to warn. The means by which it can be achieved and sustained are legion and extend much further than the social activities of tradition, including many of the benign operations described below.

Evacuations

If a situation requires more direct action, maritime forces can be used to convey a would-be adversary by demonstrating the readiness to deploy a degree of combat power which would make non-compliance, achieving it worthwhile. They are thus effective at achieving deterrence. In many circumstances, particularly those in which the main events are on land rather than in the maritime environment, the coercive action requires a high degree of joint co-operation to demonstrate credible capability in all environments. Maritime forces, including amphibious forces, have, however, particular value in terms of such action because they are able to achieve coercive effects without necessarily violating national sovereignty.

MILITARY SUPPORT OPERATIONS

MILITARY SUPPORT OPERATIONS

Constituency operations within the framework of domestic law and Australia’s international law obligations. The amount and degree of force that can be applied must be strictly within the context of the mandate given.

Peace Operations

Peace operations encompass those operations that support the diplomatic peace process. The major categories in the maritime environment are explained below.

Peacekeeping

Peacekeeping formally refers to observer and interposition forces, although its scope may extend widely to international interventions of any kind. Implicit in peacekeeping operations is that they operate under a mandate and according to conditions which are agreed by all the belligerents.

Open sea peacekeeping operations are rare: more commonly naval forces will be used to patrol coasts, estuaries and rivers to monitor ceasefires. Naval units may be used as neutral territory for talks, while naval personnel may be employed as military observers. HQ staff officers, disarmament inspectors or in medical or communications teams. Naval forces, particularly amphibious vessels and organic helicopters, can provide substantial support to ground forces.

Defence Force Aid to the Civil Power

In the context of exercise, the requirement to undertake police and security functions, notably in the case of peacekeeping operations, is that they operate under a mandate, which may occur in circumstances where one or more of the belligerents have not consented to intervention by international forces and coercive action may be required to restore peace. The Gulf War in 1991 was an important example of such action, authorised under Chapter VII of the UN charter. The roles played by maritime forces in peacekeeping will depend upon the nature and scale of the conflict, but may extend to high-level sea control and power projection operations, as well as the provision of logistic support.

Embargo, Sanctions and Quarantine Enforcement

Embargo enforcement are major maritime components of peace enforcement. While the level of force which may be employed is carefully controlled, the possibility of reprisal by the affected party generally requires such operations to be conducted in concert with a range of self-protective measures. Depending upon the nature of the threat, this may require sea control operations on an appropriate scale.

Peace Building

Where reconstruction of a state or region is being attempted in the wake of conflict, naval forces can provide many facilities to assist with such work, both in platforms and personnel. Key areas where naval forces undertake such efforts include mine clearance, the opening of ports and ordnance disposal and salvage. Depending upon the scale of the task, such activities can take years to complete, working since 1945 to clear enormous quantities of mines and dangerous ordnance not only from national territory and waters, but from South East Asia, Papua New Guinea and the islands of the South West Pacific.

Defence Force Aid to the Civil Power

Defence Force Aid to the Civil Power involves the Governor General calling out permanent personnel in times of domestic violence where civil authorities are inadequate or unsuitable and where acts are being committed in a manner likely to endanger life. This may be initiated in circumstances where there is a considerable scale and complexity and could extend to sea control measures. Apart from their ability to transport and support large numbers of people, maritime forces also provide significant assistance with shore to ship transport utilising boats and helicopters, as well as the command, control and communications facilities to coordinate operations.

A particular advantage which maritime forces have comes with their ability to poise and be persistent. Evacuations are not initiated lightly and the circumstances in which the requirement develops generally involve a high degree of uncertainty and crisis. Evacuations will almost always be conducted on a joint basis and seek to utilise a seaport or airport, but an amphibious operation may well prove necessary in undeveloped areas. In the case of SAE, the safety of the evacuation is guaranteed by local authorities and the focus is on achieving the safe and timely removal of national or displaced persons. In SAE, protective operations such as the recovery of offshore gas or oil installations, or ships held by terrorists.

Environmental and Resource Management and Protection

Environmental and Resource Management and Protection functions is one of the oldest constabulary roles of naval forces. The importance of an era in the extension of jurisdiction and increasing exploitation of oceanic and coastal waters, Australian naval units have been engaged in this task since the Commonwealth Naval Forces became the RAN in 1911. The role is continued considerably in recent years to include the surveillance and protection of offshore oil and gas installations, or ships held by terrorists.

Anti-Piracy Operations

Anti-Piracy Operations are activities by legislation such as the Prevention of Illegal Immigration and Enforcement of Quarantine Regulations, drug interdiction and prevention of illegal immigration. Defence Force personnel are specifically empowered to undertake such activities under legislation such as the Customs Act and the Migration Act.

THE BENVIN APPLICATION OF MARITIME POWER

Evacuations

Seaborne forces can be key elements in Service Assisted Evacuations (SAE) and Service Protected Evacuations (SPE). The increasing frequency of failed states and civil disorders in the last decade has led to an increase in the number of evacuations. Evacuations will almost always be conducted on a joint basis and seek to utilise a seaport or airport, but an amphibious operation may well prove necessary in undeveloped areas. In the case of SAE, the safety of the evacuation is guaranteed by local authorities and the focus is on achieving the safe and timely removal of national or displaced persons. In SPE, protective operations such as the recovery of offshore gas or oil installations, or ships held by terrorists.

Defence Assistance to the Civil Community

Defence assistance to the civil community differs from aid to the civil power in that it is related simply to the provision of help in civil matters and not the enforcement of law and order. It includes search and rescue and ordnance disposal in the domestic environment, but it also extends to the environmental management, pollution control and the provision of personnel and systems to help community development. One of the most important military assistance activities is fisheries protection. Naval forces repeatedly demonstrate that their inherent capabilities have come with their ability to poise and be persistent. Evacuations are not initiated lightly and the circumstances in which the requirement develops generally involve a high degree of uncertainty and crisis. Evacuations will almost always be conducted on a joint basis and seek to utilise a seaport or airport, but an amphibious operation may well prove necessary in undeveloped areas.
and long term assistance in disaster relief, not only for coastal locations, but sometimes well inland. While shipborne helicopters can be particularly useful and ships may act as logistic support bases, hospitals and command posts for long periods, the specialist skills available in ships also mean that their personnel can be invaluable sources of trained manpower for rehabilitation and repair work. Naval forces are self-supporting and do not create logistic burdens in situations where infrastructure has been destroyed or severely damaged. Disaster relief is one of the many activities to which naval forces can be expected to make an immediate and effective contribution with little or no warning.

Defence Force Assistance to Allied and Friendly Nations

Defence Force assistance can be provided to other countries in a wide variety of ways. In addition to those benign activities already listed, maritime forces can exercise and train with the training of other national forces to increase their effectiveness. Examples include the provision of support or air assets to practice the tactics of undersea and air warfare to a sophistication which is not possible in the absence of the relevant force elements, as well as the sharing of intelligence and surveillance data.

Chapter 8
THE MOST IMPORTANT FACTOR

THE HUMAN FACTOR

It is not technology which gives the Navy capability but the way that technology is employed. The capabilities represented by systems that can be effectively employed and sustained take many years to develop in maritime forces and they are much easier to lose than they are to create. It is people who ensure the real capabilities of the RN’s surface ships, submarines, aircraft and support organisations represent. People are thus the most important factor for the Navy’s operations. The RN has a history of achievement and excellence which provides a firm foundation for its current activities and for the future, but this foundation is one that can rapidly be eroded if we do not give the Navy’s people the priority they deserve.

Peacetime operations require nearly the same degree of commitment and effort and they, too, can be arduous and unremitting. Officers and sailors in seagoing units as well as the soldiers and airmen who go with them must live and work for long periods in very close proximity to each other. Even the largest ships are cramped and confined and all are subject to the effects of weather and seastate. All in their crews must be constantly alert to the possibility of emergencies and the unexpected. Even in harbour, ships require watchkeeping personnel to ensure their safe operation and physical integrity.

Discipline

It follows from the nature of life at sea that naval discipline is as much self-discipline as it is externally imposed. There are occasions on which orders must be obeyed instantly and without question, but the key elements of naval discipline are co-operation and teamwork. Naval discipline at its best is the result of a clear understanding of the code of behaviour required in a watchkeeping and seamanship role. It provides the framework by which personnel operate effectively under the strain, stress and lack of mutual contact.

Moral

Moral is defined as the state of mind of a group of people as reflected by their behaviour under all conditions. In developing moral, although it is a collective quality, it is necessary to start with the individual as the way to stabilise the group. The creation of high morale depends upon a way of life. Naval training must focus on the development of the qualities needed to create a spirit which, sustained by professional maturity and leadership, will never accept defeat.

Life at Sea

Life at sea is unlike any other. The maritime environment in which demands on individuals and their organisations are high, creating an environment of uncertainty and risk. Special attention to the fact that the human element which so often makes the difference in naval operations is the most important factor for the Navy’s operations. The RN has a history of achievement and excellence which provides a firm foundation for its current activities and for the future, but this foundation is one that can rapidly be eroded if we do not give the Navy’s people the priority they deserve.

Leadership

Leadership in the maritime environment is as vital as that on land. It is stimulating and exciting, but it is different because the nature of what is done at sea and on land are themselves very different. The focus at sea is on the effort of the entire crew to place the combat instrument which is the ship into the control of the directing mind of the commander. No bullet is fired, no missile is launched without specific command and direction. With very few exceptions this applies even in the most intense of combat situations and it is not widely delegated. By contrast, the infantry commander must lead his men as individuals to make their singular contributions to the combat effort in accordance with his intent. It is a fair generalisation to say that the aim of leadership at sea is the ship’s company and their ship as a fighting instrument and the aim on land is the individual as a fighting instrument.

This means that leadership at sea depends vitally upon professionalism, but in no way does it diminish the importance of the human element. One advantage that the leader at sea possesses is that risk is shared by all, whereas the leaders of the ships involved in combat. The need for teamwork, the enclosed and confined nature of the shipboard environment and the long and arduous nature of maritime operation means that leadership must be total, personal and consistent. The crowning example of naval leadership remains that of Lord Nelson, whose ability to generate enthusiasm and devotion amongst his subordinates at every level was a basic element of his success in battle. An outstanding Australian naval leader was Captain Hector Walker, whose command of HMAS Stuart (II) and the Scarp Iron from 1939–41 set a standard recognised by all who knew him.

Training

The processes by which men and women are trained for maritime combat involve both individual and collective effects. The complexities of modern combat and the systems that they carry mean that as part of personnel of all ranks and specialisations require intelligent and a high level of education from the outset. This applies as much self-discipline as it is externally imposed. There are occasions on which orders must be obeyed instantly and without question, but the key elements of naval discipline are co-operation and teamwork. Naval discipline at its best is the result of a clear understanding of the code of behaviour required in a watchkeeping and seamanship role. It provides the framework by which personnel operate effectively under the strain, stress and lack of mutual contact.

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US Navy announces DDX decision

The USN has announced that Ingalls Shipbuilding Inc., Northrop Grumman Ship Systems (NGSS) has been selected as the lead design agent for the DDX ship program. This includes the award of a cost-plus-award-fee contract for the project, valued at US$2.9 billion for design agent activities such as the systems design of the DDX destroyer, and the construction and test of its major subsystems. NGSS was the leader of a team of contractors called the 'Gold Team' that included Raytheon Systems Co. as the combat systems integrator, Iron Works (BIW) as a subcontractor to the Blue Team member Bath Iron Works, and a number of other companies.

Gold Team's proposal also incorporated 'Blue Team' member Bath Iron Works (BIW) as a subcontractor to perform design work and test activities, which will ensure BIW will have the ability to produce a detailed DDX design and build these ships in the future.

The award of the DDX Design Agent contract signals the start of a revolution for the US Navy's surface combatant fleet, with the development of fifth generation destroyers, known as the DD(X) or DDX, which will ensure BIW will have the responsibility of the Combat Systems Integrator.

Construction of these ships will ensure the DDX is the Joint Strike Fighter equivalent for a surface combatant. The ship will be designed to meet the national security requirements in the 21st century.

Proposed Systems

The Navy will use the wharf for large platform's operation from naval vessels. The contractor is now approaching local subcontractors with a view to sourcing local construction materials and services.

A state-of-the-art Port of Brisbane dredge vessel has already arrived for the start of dredging of the ship in its terminal flight phase. The contractor is now approaching local subcontractors with a view to sourcing local construction materials and services.

The Navy has announced that it will proceed with the construction of the new frigates using DCN's Système Automatique de Manutention de Matériel (SAMM) system, a rotor de-icing system and Northrop Grumman (formerly Litton) BridgeMaster E navigation system.

Morocco receives new frigates

The first of two frigates modeled on the French Navy's Foch-class frigate was handed over to the Moroccan Navy on 12 March. In 2007, built at Alstom Maritime's Chantiers de L'Atlantique Saint Nazaire shipyard, the MOHAMMED V should be joined by sister-ship HASSAN II, due for delivery to the Navy in 2008.

The missile was tested against a flying (Vt) Vandal target representing a ship's high-speed missile threat. The target was detected by the ship's combat systems and assigned to ESSM. The ESSM round was fired using home-all-the-way guidance. The missile acquired the target, initiated terminal guidance and flew to intercept, with the proximity fuze detecting the target and initiating near-field detonation. Preliminary data indicate all test objectives were met.

The ESSM was launched off the Southern California coast from a Mk-29 Octuple launcher on the USN's Self-Defence Test Ship. The ESSM has already demonstrated its ability to counter both submarine and supercavitating high-speed missiles.

ESSM Scores

Raytheon's Evolved Sea Sparrow Missile (ESSM) has achieved two major milestones this year. On 27 March it made its first at-sea interception of a Harpoon anti-ship missile. The ESSM was fired from the USN's Self Defence Test Ship in home-all-the-way guidance mode before destroying the Harpoon, which was following a low-level trajectory.

In another ESSM test conducted on 1 May 02 from the USN's Self Defence Test Ship the missile successfully intercepted a supercavitating target.

Product Recall

Bangladesh frigate returned to maker

On 18 February 02 the Bangladesh Navy decommissioned its latest frigate, BNS BANGABANDHU. The frigate was returned to its builder, Daewoo. The frigate was to be arrived at the port of Chittagong for sea trials in May 02.
The French nuclear powered aircraft carrier CHARLES-DE-GAULLE. The carrier is still played with propeller problems which will hopefully be fixed by year end (DCN).

In other news, while participating in Operation Enduring Freedom, CHARLES-DE-GAULLE broke off its operations in the Arabian Sea to travel to Singapore to assess its suitability as a regular supply centre for the French fleet.

CHARLES-DE-GAULLE stopped in Singapore between 3-8 May and then headed back to the Arabian Sea for a joint exercise with the Royal Saudi Navy.

The ship was planned to visit Australia as well but operational demands precluded her stop over.

However, the reason for the trip to Singapore is widely thought to be a sales pitch for the Singaporean requirement for 20-24 new generation fighter aircraft, of which CHARLES DE GAULLE has seven new-generation Rafale fighters on her flight deck. The Rafale’s maker, Dassault Aviation, saw Singapore as a potential customer for the Rafale.

The Rafales aboard CHARLES DE GAULLE are air combat fighters and, as such, did not conduct operations over Afghanistan. However, it is reported that they logged a total of 128 flying hours in exercises in the Arabian Sea, many of them conducted with US Navy F/A-18 Hornet from the aircraft carrier USS JOHN C. STENNIS.

Since late December the French Navy’s Marine Nationale’s 16 Super El:eqard fighters deployed on CHARLES DE GAULLE have logged a total of 669 operational flights over Afghanistan. These included 250 missions, 60% of which were ground support operations and 40% reconnaissance flights over 457 targets. The CHARLES DE GAULLE’s two E-2C Hawkeye airborne early warning aircraft also flew 412 hours on reconnaissance flights for coalition forces in Afghanistan.

Boeing delivers first Harpoon Block II kits to Denmark

Following the installation of the necessary upgrade kits, the Danish Naval Materiel Command has taken delivery of its initial Harpoon Block II missiles, marking the first international sale of the upgraded missile. The kits are to be installed by the Royal Netherlands Navy for the Royal Danish Navy at their joint missile maintenance facility in Den Helder.

The Harpoon Block II kit provides a new Guidance Control Unit flight computer, a new guidance section shell and a Global Positioning System (GPS) antenna. When installed, the Harpoon Block II missile becomes a more accurate navy weapon system than its predecessors, and can be used for coastal clutter suppression.

The Block II missile incorporates guidance technologies from two other Boeing weapons programmes – the low-cost, inertial measuring unit from the Joint Direct Attack Munition; and the software, mission computer, integrated GPS/Inertial Navigation System, and GPS antenna and receiver from the Standoff Land Attack Missile Expanded-Response. These technologies are designed to expand Harpoon’s capability to attack coastal, in-harbour and land targets.

The US Navy completed flight testing of the Harpoon Block II in November 2001. Denmark was the first country to sign a $10 million contract for the kits in 1999. This modification upgrades about half of the Royal Danish Navy inventory.

South Korean Navy gets first International Mk-45 Mod 4 Gun

United Defense and World Industries, Inc., have delivered the first internationally produced Mk-45 Mod 4 gun to the Republic of Korea (ROK) Navy. This is the first time a Mk-45 Mod 4 gun was sold overseas and is the culmination of teamwork by WIA and United Defense over the past 27 months.

United Defense and WIA jointly produced components for the Mod 4 guns. United Defense provided technical assistance, spare parts and training, while WIA did final assembly and test in Korea.

The gun variant of the ubiquitous naval gun has a longer barrel, a stealthy turret shield and able to fire the ERGM (Extended Range Guided Munition) as well as standard 127mm rounds. The longer barrel increases the range of a standard shell from 24km to more than 40km.

United Defense won a competitive $39 million (US) contract in December 99 to co-produce three Mk-45 Mod 4 guns for Korea’s KDX II lightweight destroyer shipbuilding program. WIA will deliver the second gun in October 2002 and the third one in August 2003. Since the original contract, United Defense has begun discussions with WIA to co-produce the next purchase of guns for the Korean Navy.

New RN First Sea Lord

Her Majesty The Queen has graciously approved the appointment of Admiral Sir Alan West to succeed Admiral Sir Nigel Essenhigh as First Sea Lord in September 2002, and, on promotion to Admiral, Sir Jonathan Band to succeed Admiral West as Commander in Chief Fleet.

Admiral West, at present Commander in Chief Fleet, will take over the post of First Sea Lord and Chief of the Naval Staff on 17 September 02 when Admiral Essenhigh retires after 37 years service. Vice Admiral Band, currently serving as Deputy Commander in Chief Fleet, takes over as Commander in Chief Fleet on 2 August 02.

Born in 1948, Admiral Sir Alan West joined the Royal Navy in 1965. He has spent the majority of his career at sea, serving in fourteen different ships, and commanding three of them. He qualified as a Principal Warfare Officer in 1975, and Advanced Warfare Officer (Above Water Weapons) in 1978, and also as a Fighter Commander. He is a graduate of the Royal Naval Officer Cadet Course, the Higher Command & Staff Course, and the Royal College of Defence Studies.

In 1980, promoted to Commander, he took command of the frigate HMS ARDENT, taking the ship to the Falklands in 1982, where she was sunk during the successful retaking of the islands. He was subsequently awarded the Distinguished Service Cross for his part in the action and led the Victory Parade through the City of London. He has held several appointments in the Ministry of Defence and played a prominent role in the reorganisation of the MOD, the introduction of a new budgetary system within the Services, and headed the study into women’s integration and their service at sea. Promoted to Rear Admiral in February 1994, he was responsible for naval manpower, numbers and structures, as well as career management and deployment. He moved the department from London to Portsmouth, set up a new organisation and prepared it for agency status.

In February 1996 he became Commander UK Task Group, and was almost permanently deployed in one of the aircraft carriers leading the two largest and longest UK naval deployments since the Falklands and Gulf conflicts. The only European seaborne principal subordinate commander in NATO, he was also a UK-designated Joint Force Commander. He was promoted to Vice Admiral in October 1997 and appointed as Chief of Defence Intelligence.

He was knighted in the Millennium New Year’s Honours List and promoted to Admiral in November 2000, where he took up his position as Commander-in-Chief Fleet, Commander-in-Chief East Atlantic, and Commander Allied Naval Forces North.

Canada acquires Phalanx IB

The massive US defence company Raytheon is being awarded a US$29.8 million contract to produce 21 Phalanx Block 1B upgrade kits for the Royal Canadian Navy. This represents the single-largest contract to date for the surface mode upgrade for the Phalanx Close-In Weapon System.

The NGFs will be built in two configurations — four as anti-submarine warfare (ASW) platforms and six general purpose/attack vessels. The programme also calls for commonality between the two types to reduce procurement and life-cycle support costs.

The new ships will replace the current inventory of two Lupo-class submarines built between 1977 and 1985, all of which are due to retire in 12-15 years. Two Lupo-class frigates have been decommissioned; the remaining pair will follow by 2003. To bridge the gap, some of the Maestrale will undergo a limited overhaul between 2003 and 2008 to extend their service life until the NGFs are commissioned.

A preliminary feasibility study ‘Project 123’, was completed by the Naval Staff’s Studies and Projects Department earlier this year. The study called for a hull of no more than 5,000 tons; 135m long, with a maximum continuous speed of 27 knots and a cruising range of 6,000nm at 18 knots. The design will adopt an electric propulsion architecture and a high level of automation to cut operating costs and reduce manning requirements to around 130. Survivability will be improved by reducing signatures, making use of internal compartmentalisation and selective arming.

Both versions will be fitted with the SAAMIT (surface-to-air missile/Italy) self-defence system (based around the EM PAR radar) and SHIELD (surface-to-surface missile/Italy) self-defence system.

The increases cover price rises and the impact of the US’s unilateral trade tariffs on a range of goods imported into the US. The Budget also increased funding for the armed forces by $5.8 billion over the next four years.

Overall Defence Department funding is expected to grow by 21% over the same period, with an additional $5 billion going to buy new ships and equipment over the next four years.

RAN funds

Australia’s defence efforts received another boost in the recent Federal Budget. The Treasurer, Peter Costello, announced increases to meet the cost of current commitments to the war on terrorism and enhanced domestic security arrangements in the aftermath of the September 11 terrorist attacks in the US. The expanded commitment to maritime surveillance and border protection operations.

OVERALL FUNDING RISKS

The Defence Department’s 2002-03 budget is based on the assumption that the cost of the Iraq war will be at least $11 billion. However, the budget also includes additional funding for the defence department to meet the cost of current commitments to the war on terrorism and enhanced domestic security arrangements in the aftermath of the September 11 terrorist attacks in the US. The expanded commitment to maritime surveillance and border protection operations.

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Class new submarines, continued redevelopment of HMAS ALBATROSS including a helicopter underwater escape trainer and helicopter wash facility, and transition of Navy and Air Force radio network operational facility, and transition of Navy and Air Force radio networks to high frequency communications system.

Automated sites will eventually operate in the Riverina, and at Shoal Bay, Taree and South West Cape. The project for replacement of the Fremanc Class Patrol Boats will continue, and tenders for new ammunition storage facilities for Nowra, in southern New South Wales are to be called in mid-2002 - construction of the wharf began in March this year.

Recruiting & retention improve

A few months ago, the Navy Capability Management Committee (NCMC) met in Canberra to review funding priorities for the coming Budget year. All HEG (Force Element Group) Commanders attended, together with representatives of Navy Headquarters, Maritime Command, System Command, and the DMO - supported by many of their respective business Managers. Because recruiting and retention rates have now started to increase, RAN numbers are expected to increase in 2002-03 by more than 2% to over 12,500 - the highest level since 1999-2000 and continue to increase steadily towards the target strength of around 14,000. Funding will permit System Command to continue with the ongoing review and civilisation of non MRO budgets, a commitment made by the Chief of Navy in September 2000.

CDF pays tribute to unique unit

CDF ADM Chirp Barne recently unveiled a plaque commemorating the EMU (Experimental Military Unit) personnel of the RAN and the United States Army who served together in the Vietnam War.

Over a thousand people gathered at Bomaderry on the south coast on Saturday, April 27 02 to participate in the service.

In the presence of US Ambassador Thomas Schieffer and many Australian and American veterans and their families, ADM Barne dedicated the monument to the men of the 135th HAC (Assault Helicopter Company) of the US Army, which included many members of the RAN's Fleet Air Arm.

CDF said the 135th HAC was a unique combat unit. From October 1967 to June 1971 a detachment of RAN Fleet Air Arm personnel was integrated with the US Army unit. The Australians and Americans of the 135th operated troop carrying and ground attack helicopters in the war against insurgents in the Republic of South Vietnam. It was designated by the US Command as the Experimental Military Unit, or EMU, and had as its motto 'Get the bloody job done'.

The 135th HAC confirmed its motto with an unsurpassed record, a high reputation, and hard work, which was not without loss and sacrifices.

Historical records eight RAN personnel were killed in the war in Vietnam: five were members of the EMU. Thirty-six American EMU were also killed in combat.

The nearly 50 strong group of Australians were Fleet Air Arm and support personnel posted as the RAN Helicopter Flight - Vietnam, a detachment of 723 Squadron, based at HMAS ALBATROSS, in Nowra. Four flights spent a year's tour of duty flying in Vietnam, with one detachment in Vietnam.

RAN personnel were involved in all aspects of 135th activity. A US Army officer commanded the fully integrated international unit, totalling some 300 personnel, with an Australian Navy captain as its XO and second in command.

Australian pilots were in command of the helicopter platoons and Australian technical personnel were in leadership positions throughout the maintenance areas. Australians were also in charge of the food preparation and the medical support facilities.

Part of the daily task of the multinational unit was helicopter insertion and recovery of troops, providing air-to-air support, resupply of ammunition and equipment, and recovering casualties, throughout all weathers conditions, night and day, at times under direct enemy fire.

A former member, CPOATWO Jim Hill said, 'For me the EMU monument is a unique reminder of the close Australian links with the United States.'

It is dedicated to Australian and United States service personnel of two different armed services of two allied nations fighting against a single military unit and fought a bloody, controversial and unconventional war, of which we were fully part of.
Hatch
BALLARAT Launches

BALLARAT, the eighth ANZAC class Ship, has been launched at Tenix Defence’s Williamstown dockyard in Victoria on Saturday, 25 May 2002. The ANZAC Ship Project is a collaborative project between the Australian and New Zealand Governments for the development and construction of 10 new guided missile frigates—eight for the Royal Australian Navy (RAN) and two for the Royal New Zealand Navy (RNZN).

So far Tenix has delivered HMAS ANZAC, ARUNTA and WARRAMUNGA to the RAN and HMNZ Ships TEOHA and TE MANA to the RNZN.

The Commonwealth awarded the ANZAC Ship Project contract to Tenix Defence in 1989. This 15-year fixed price contract currently worth approximately AUS$6 billion and is the largest defence contract ever awarded in Australia to date.

Managing Director of the Tenix Group, Mr Paul Salteri, said the success of the ANZAC Ship Project was testament to the quality of Australian workmanship and engineering ingenuity.

The Tenix-built ANZAC frigates have proved to be a sophisticated world-class vessel capable of meeting the operational and strategic needs of both the Royal Australian and Royal New Zealand Navies,” he said.

BALLARAT will now be fitted out with sophisticated new combat and communications systems and hardware. The ship is scheduled for delivery to the RAN in mid-2004.

Match
DIAMANTINA Commissions

Saturday May 4 2002 saw the Australian Navy commission its new Huon class Minehunter HMAS DIAMANTINA at a ceremony at HMAS WATFORDEN in Sydney.

The blessing of the Almighty was called down on the vessel during the Service by three RAN chaplains accompanied by RAN Band Sydney under LEUT Paul Cotton.

The 720-tonne fibreglass warship was built at ALA’s Carrington shipyard in Newcastle.

Her hull is designed to withstand tremendous underwater shocks. DIAMANTINA’s hull is single skin without any ribs or reinforcing frames.

On board, all machinery and equipment is mounted in cradles or suspended from bulkheads to further enhance shock resistance, reduce noise and protect ship systems.

VADM David Shackleton indicated during his speech he was very pleased with the new minehunter Guest of Honour for the commissioning ceremony was Maurice Bruden, whose father, CMR Maurice Rose, commissioned the first DIAMANTINA.

The minehunter’s principal task is to keep Australia’s maritime local points free from the threat of mines.

Once mines are detected the ship deploys a remote control mine disposal vehicle to identify and neutralise the mine.

Versatility is the new order of the day for the US military and versatile is just what HSV-X1 JOIN VENTURE is proving to be. With her capability to quickly deploy troops and equipment before speeding away from danger HSV-X1 is turning the heads of her many observers.

HSV-X1 JOIN VENTURE, on charter to the US military, from Bollinger/Incat USA, made a name for herself when she served as the Mine Countermeasures Command and Control Ship during Gulf of Mexico Exercise. More recently the craft has been under the watchful eye of Marine Corps operational commanders as they explore its potential operational and tactical roles for the first time.

On February 5, the craft left her homeport at Naval Amphibious Base, Little Creek in Norfolk, Virginia and set out on a high-speed Atlantic transit. HSV-X1 completed the passage, unrefuelled, in an impressive five days and 17 hours at an average speed of 27 knots.

The purpose of the crossing — Battle Griffin, an exercise off Norway alongside NATO forces between March 7 and 14 HSV-X1 was used as a platform to test various concepts, such as its ability to move equipment via coastal routes from an arrival port in southern Norway to the exercise in northern Norway.

Yet another list of firsts to the already impressive catalogue of achievements saw HSV-X1 carry out replenishment and re-supply at sea; special insertion and redeployment operations; reconnaissance; command and control; anti-submarine and mine warfare; humanitarian assistance and evacuation; surface warfare and force protection. Never before has a high-speed craft accomplished so much.

The observers could not fail to be impressed. During the early stages of the exercise the craft performed a pseudo-departure for an amphibious raid on Kykerstors, some 75 nautical miles distant. In route she was diverted to hide in a very small fjord as information received indicated the port facility had not yet been secured. Arriving off a port a high speed the vessel slowed down when within 700 metres and, after a very quick berthing completed discharge of Light Armoured Vehicles (LAVs) and other vehicles in ten minutes, with永普 following behind. Within minutes HSV-X1 Joint Venture was underway again, departing the area at high speed and proceeding to sea to escort the MV Dhergon into port.

As night fell on that hectic day, HSV-X1 came into her own. A night raid into enemy territory took enemy combatants completely by surprise.

The following day MV Dhergon was again under HSV-X1 escort and an advance reconnaissance of the entire 40 miles route was completed in just one hour.

Most apparent was HSV-X1’s ability to navigate at high speed in the very tight confines of Norway’s fjords using the electronic chart system ECHOS and radar, particularly in poor visibility due to snow and rain. Additionally, the craft displayed her capability of operating free from mechanical problems in sub-freezing temperatures with frequent snow.

Captain Philip Biepler, Commander of the ship, said: “HSV-X1 was able to take advantage of narrow weather windows, as we did by departing Trondheim eight hours early, to get ahead of the predicted weather. A slower vessel would have had to wait two days for a safe departure.” In doing so, Captain Biepler demonstrated his advanced understanding of strategic capabilities only available to fast craft that easily run bad weather.

Captain Biepler continued: “The craft showed that we could operate safely at 15 knots in beam or following seas of 6 metres significant wave height.”

If HSV-X1 needed to prove she was a workhorse then she did just that towards the end of the exercise, completing a winter intra-theatre lift of US Marine Corps (USMC)
• flexibility to respond on very short notice to new threat like an amphibious assault
• sustain speed of 40 knots in confined waters, leading to tactical surprise by opposing forces not expecting such rapid movements
• ability to launch an amphibious raid into an aerated port with complete offload of vehicles and troops in a few minutes
• ability to carry and precisely lay large numbers of mines in calm weather for a proper hearing

The Battleships

Documentary
A Rob McAuley Production
Producer/Editor Rob McAuley
Series Editor/Writer Peter Butt
Narrator Robin Williams
209 minutes
Available on DVD as a Double-Disc Set Video for approximately $59.95 each from all ABC Shops. ABC Video

The Battleships is enriched with eyewitness accounts and contributions from naval experts around the globe, the series spans almost two centuries - from the Battle of Trafalgar through to the Gulf War examining the rapid evolution of firepower and battleship design - from canvas to steam; timber to steel Armour, muzzle-loading cannons to 18-inch guns, and beyond to rocket-launchers and missiles. As the spearhead for colonial expansion and in defence of the great empires, the battleship reigned supreme. As one observer put it, "the battleship drew the line between nation and empire."

Some of the revelations and insights about the capabilities of the ships featured are amazing and for many will come as a first, making the documentary a very interesting and satisfying journey of discovery.

One such revelation involves the British capital ship VICTORY. This wooden battleship had 27 miles of rigging, four acres of canvas, took 6 years to build and was made from 2000 oak trees. One broadside from her three gun decks was able to hurl a half tonne of metal at an enemy ship. Apart from describing ships the documentary also takes one on a virtual tour of some of these ships as they are today as museum pieces.

Another little known fact discussed was Hitler's plans for another battleship equal to or greater in size than the world's largest. This came in the form of the Washington Naval Treaty which limited the number and size of the world's capital ships. Without it, we believe that the US and Britain would have gone to war for a second time.

Another little known fact discussed was Hitler's plans for the V-1 and V-2 rockets, which details the history of another weapon ever built. No weapon evoked so much fear as the V-1 and V-2 rockets. As the series concludes, "The Battleships" is a Rob McAuley production. Many will remember that other superb documentary series produced by Rob, "The Liners," which details the history of another great subject, the great ocean liners, "Sinking the Line" for naval and maritime documentaries to be judged by. "The Battleships" certainly lives up to the standard that Rob set. His new documentary is a concise yet broad history of the capital ship, the Naxos that operated them and the battleship's empire building contribution to the history of the world.

Before the nuclear bomb, "No weapon evoked so much passion and fear as the battleship. The largest and most expensive weapon ever built, it had a dramatic role in shaping the modern world." This is the opening statement and sums up the central focus of the series. The story of the battleships is told in four epic one-hour episodes - A Tour of Duty, 1914-1918; The Darkness of the Future, 1916-1939; and Terrorism from Above, 1939-Now.

The Battleships is a Rob McAuley production. Many will remember that other superb documentary series produced by Rob, "The Liners," which details the history of another great subject, the great ocean liners, "Sinking the Line" for naval and maritime documentaries to be judged by. "The Battleships" certainly lives up to the standard that Rob set. His new documentary is a concise yet broad history of the capital ship, the Naxos that operated them and the battleship's empire building contribution to the history of the world.

The German High Seas Fleet captured on film during the Battle of Jutland.
interviewed span time and distance from the sinking of the German Fleet at Scapa Flow to the attack on Pearl Harbor.

This documentary abounds with fascinating footage such as the USS MAINE disaster in Cuba of 1898 - which spurred the 1898 naval war between the US and Spain, the launch of HMS DREADNOUGHT by King Edward in Feb 1906 with a bottle of Australia wine, the battle of Jutland with the world's first combat aerial photography of the German High Seas Fleet turning for a second time to engage the UK Grand Fleet, the wrecked German Fleet at Scapa Flow, HMAS AUSTRALIA being sunk off Sydney Heads and many more astounding images and footage.

Although a potential 'anti-climax' for battleship history enthusiasts, the documentary does deal with the ascension of the aircraft carrier over the battleship and rightly so as this is part of the battleship story. The aircraft carrier is also without doubt the capital ship of today and with the documentary's focus being capital ships as opposed to straight out battleships this end of the series is appropriate.

Unlike other documentaries on the subject, The Battleships is not set in Jutland, Iowa, UK or US centric view of the capital ship, nor does it try to emotionalise and sentimentalise the subject as other lesser documentaries have tried to in order to account for an acute lack of substance both in historical information and footage.

The Battleships is truly the thinking man's naval documentary and cannot be recommended highly enough.

### Pearl Harbor

Two DVD Movie set

**A Jerry Bruckheimer/Michael Bay production**

**Touchstone Home Video**

**Distributed by Buena Vista Australia**

183 minutes main feature

47 minute 'Making of' documentary

Reviewed by Mark Schwerskot

The long awaited special edition DVD movie Pearl Harbor is now available and thanks to Buena Vista Australia THE NAVY has obtained a copy for review. The special features included on this two DVD set comprise the original theatrical trailer; the Faith Hill Music Video 'There you'll be'; a short documentary on the Japanese Perspective of the movie and a documentary on the 'Making of' the Movie Pearl Harbor, and of course the movie itself which was reviewed in THE NAVY, Vol 63 No 3 p30.

To those who enjoyed the movie the special edition DVD set is well recommended. The 'Making of' documentary gives a whole new insight and understanding of the film and would have served critics well had they seen it.

Pearl Harbor is a balanced account of December 7, 1941 and was never intended to demonise either side's participation on that infamous day. Leading man Ben Affleck says, during the 'Making of' documentary that "I wouldn't have done it (Pearl Harbor) if I thought it was a piece of propaganda". World renowned Japanese actor Mako, who plays Admiral Yamamoto, said that the Japanese are not portrayed as evil or dark and that the absence of sensationalism to promote an emotional response against the Japanese is a selling point of the movie to a world-wide audience, to which the makers wished to reach.

Pearl Harbor doesn't glorify War or the opening stages of WW II but the use of special effects and the effort gone into demonstrating the intense ferocity of the day can make some believe, incorrectly, that is anything but an open and honest attempt to describe this tragic event. Other criticisms involve the two characters experiences as being unrealistic and to this point many are right. However, as the director explains, the story of Pearl Harbor was so incredibly large that no single experience could do justice or adequately explain what occurred. Thus, in order to tell the story the two central characters are put through a collection of actual experiences, what happened to them happened to someone is the director's philosophy behind the characters. For example, during the attack on Pearl Harbor two pilots did manage to get airborne and shoot down six Japanese planes.

The massive gamble made from 350,000lbs of steel for the movie to depict the capsizing of the battleship USS OKLAHOMA. Superstructure and background was then added by computer later.

To get an idea of the real story of December 7 1941 over 70 Pearl Harbor Veterans were interviewed for their perspective. Many also visited the set to act as advisers to the 'work in progress'. 'Doolittle Raid' survivors were also interviewed and visited the set during shooting. The information and experiences passed on by these veterans gives the movie a better grounding in realism than many would think or know.

The film was shot on location in Pearl Harbor with the battle scenes over the harbor taking six weeks to complete. The US Department of Defense gave the movie unprecedented access and permission to use the military facilities and personnel not only at Pearl Harbor but at other US Military establishments and ships, such was their confidence in the director's work. Aircraft used in the film are actual WWII aircraft with extra aircraft computer added to give a better perspective on the numbers involved. The film used a collection of flying 'warbirds' which included four P-40 Warhawks, three Zeros, three Kates, three Vals and three B-25 Mitchell bombers. The special effects team also received permission to place explosive charges on a number of decommissioned ships in Pearl Harbor to create the impression of an actual attack. This was coupled with actual Japanese aircraft flying over, in and around Pearl Harbor and the ships. The special effects team used 7,000 sticks of dynamite, 2,000ft of 'det cord' and 4,000 gallons of petrol to create massive explosions on the many decommissioned USN ships. It would have been rather perplexing for tourists visiting the USS ARIZONA memorial to see propeller driven aircraft with Japanese markings flying around the harbour at low level with large explosions and pillars of black smoke rising from a collection of ships just a few kilometres away.

Another fascinating element to the making of the movie involved flying condition B-25 Mitchells being hoisted aboard the aircraft carrier USS CONSTITUTION for the at sea 'Doolittle Raid' scenes. The B-25s had to compete for deck space with S-3 Vikings and F/A-18 Hornets landing and taking off for their own take off scenes from the carrier. The last time a B-25 took off from a US carrier was during the 50th anniversary of the Doolittle Raid.

Other bits of trivia from the making of documentary involve some of the lead actors actually attending US Army boot camp to get a better perspective on military life and what it means to be a service member.

Nearly all extras were US military personnel with over 8,000 WWII uniforms and other period clothing having to be made for the film to generate a feeling of realism, for which the director and producer are well known for in Hollywood.

The two DVD set of Pearl Harbor is well recommended.
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 capability to defend itself, paying particular attention to maritime defence. Australia is, of geographical necessity, a maritime nation whose prosperity 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 a defence capability which is knowledge-based with a prime consideration given to intelligence, surveillance and reconnaissance.
- Advocates the acquisition of the most modern armaments and sensors to ensure that the ADF maintains some technological advantages over forces in our general area.
- Believes there must be a significant deterrent element in the Australian Defence Force (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.
- 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.
- Endorses the transfer of responsibility for the coordination of Coastal Surveillance to 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.
- Advocates the development of a defence industry supported by strong research and design organisations capable of constructing all needed types of warships and support vessels and of providing systems and sensor integration with through-life support.

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 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 will lack air defence and have a reduced capability for support of ground forces.
- Advocates the very early acquisition of the new destroyers as foreshadowed in the Defence White Paper 2.
- Advocates the acquisition of long-range precision weapons to increase the present limited power projection, support and deterrent capability of the RAN.
- Advocates the acquisition of the GLOBAL HAWK unmanned surveillance aircraft primarily for offshore surveillance.
- Advocates the acquisition of sufficient Australian-built afloat support ships to support two naval task forces with such ships having design flexibility and commonality of build.
- 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 that in any future submarine construction program all forms of propulsion be examined with a view to selecting the most advantageous operationally.
- Advocates the acquisition of an additional 2 or 3 updated Collins class submarines.
- Supports the maintenance and continuing development of the mine-countermeasures force and modern hydrographic/oceanographic capability.
- Supports the maintenance of an enlarged, flexible patrol boat fleet capable of operating in severe sea states.
- 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 current economic problems and budgetary constraints, believes that, given leadership by successive governments, Australia can defend itself in the longer term within acceptable financial, economic and manpower parameters.
Two RAF CH-47 Chinooks about to land back aboard HMS OCEAN after a Special Forces insertion mission into Afghanistan. The Chinook’s long range, speed, reliability and flexibility, even in a maritime environment, is making it the workhorse of the war against terrorism both in the high rugged mountains of Afghanistan and the hot tropical jungles of the Philippines. Dust and mud can be seen on the two helicopters as they make their approach. (RN)

At sea aboard HMAS KANIMBLA (P 861) Jan. 15, 2002. RAN crew members prepare to launch a Rigid Hull Inflatable Boat (RHIB) of the US Navy’s Special Boat Unit 26 (SBU-26), Detachment November. Both countries are conducting multinational Maritime Interdiction Operations (MIO) against Iraq during Operation Enduring Freedom. Two USN SEAL Special Forces RHIBs (Rigid Inflatable Boats) also operated from HMAS KANIMBLA.
The anti-terror fleet. Naval ships from five nations sail in formation for a rare photographic opportunity in the Arabian Sea. From top row left to right: Italian frigate, ITS MAESTRALE (F-570), French destroyer FS De GRASSE (D-612), USS JOHN C. STENNIS (CVN-74), USS PORT ROYAL (CG-73), French aircraft carrier FS CHARLES DE GAULLE (R-91), British Royal Navy amphibious warfare ship HMS OCEAN (L-11), French frigate FS SL ROL (F-711), USS JOHN F. KENNEDY (CV-67), Dutch frigate, HNLSM VAN AMSTEL (F-831), and the Italian destroyer ITS LUIGI D'URAND DE LA PENNE (D-566). The coalition forces are deployed in support of Operation Enduring Freedom. (USN)
The Creswell Oration

Regional Anti-Ship Missiles

The Battle of Salamis 480 B.C.

Australia's Maritime Doctrine – Part 6

Australia's Leading Naval Magazine Since 1938
The Tasmanian-built 'Joint Venture', currently being leased to the USN, at sea and at speed with a new USN MH-60S about to land on its flight deck. The USN has indicated it is extremely impressed with the Tasmanian 'Cat' and may be close to placing an order for up to 100 vessels. (USN)

HMCS SUMMERSIDE passes a large iceberg while taking part in Exercise Narwhal Ranger. Exercise Narwhal Ranger was a Canadian joint operation with the army and air force and is the first of a series of operations to reintroduce the RCN to the key North and get the three branches of the armed forces working together. (RCN)
FROM THE CROW'S NEST

Where is Australia heading?

In mid-year a number of changes in senior ADF appointments took place at a time when for several reasons defence issues were receiving much closer-than-usual public attention. The principal changes were those of Chief of the Defence Force (CDeF) and Chief of the Air Force (C AF) remaining in place. The departures of CDF, CN and CA were, however, one of the situations that were of concern to those who followed the activities of Australia's political leaders. Such changes, it might be thought, should encourage the public to trust the political decisions made by the new leadership.

From the ABC to say that the series had won the highest rating for the centuries and decades, like it or not. The British battleships and the indeed a delight to receive such positive comments on our attempts one show otherwise. This was not demonstrated in this series WARRIOR, the first iron battleship? No matter how well built in my view. Fleets they made up were the most effective and successful. Can any long even if she had the biggest hospital afloat. Surely through the British battleship - or the Royal navy. Where is Australia heading?

The articles on Australia's Maritime Doctrine would be of more interest to the reader and one who had been to Waterloo, the last remaining battleship veteran of the British and Allied navies. According to the 1855-1876 dates for the HMAS SUPPLY 73-74.

FROM OUR READERS

Dear Editor,

I greatly enjoyed the article in the last issue on the DELHI class. It does seem that the Indians consider that naval ships should actually be armed with offensive weapons, particularly when one compares this with the lightly armed or gun-equipped ships of the over-stretched RAN. The articles on Australia's Maritime Doctrine would be of more value if Australia actually had the equipment to do all the things our doctrine expects. That is not to say the efforts of the people of the RAN who have long experienced politicians wanting more than they pay for.

Graeme Andrews OAM.

Editor,

I am part of the organisng crew for an upcoming Reunion for all art members of HMAS SUPELL. This reunion is to be held on the 302/10062006, at the Rosehill RSL, in Sydney's western suburbs.

Any ex crew member inquiring are cordially invited to contact either myself, Ken Witchard on (02) 6492 3060 or RW Bubbles, Crewman on (02) 6492 3060. The web page is http://www.nvss.com.au/FromTheWindsor.htm.

So far we have located about 90 ex crew members and this reunion is open to all ex crew Officers and Sailors afloat in any very first crew from 1902 to the last in the 80's.

Ken Ex Drugy J195525
HMAS SUPELY 73-74
E-mail: WitchWeb@bigpond.com

Dear Editor,

I do not share the enthusiasm of your reviewer for the ABC TV series "THE BATTLESHIPS". I confess though to missing one or two broadcasts. To me it has the usual ABC bias against things British. In this case the British Battleship. Where there mention of HMS WARRIOR? The first iron battleship? How many well built German battleships were, they were not well built in the long term. Much was made of US Battleships in European waters in WWI e.g. USS TEXAS. The ABC did not comment on our Hudson or the USS. The British battleship story is a vast one. Hopefully your reviewer will cover this in his next book. The events of 400 B.C. were later recorded in detail by the Greek historian, Herodotus, who was born sometime around 490 B.C. As a young man Herodotus travelled widely throughout Greece and the Mediterranean world, compiling his "The Histories". During his travels he would have spoken with some of the veterans who took part in the sea battle of Salamis. His chapters on this battle not only give an interesting insight into naval tactics of the time but also the politics of war.

Plans for Invasion

The Revenge was one of the main reasons for Persia's plan to invade Greece in 480 B.C. Ten years previously the Persian King Darius had decided to punish the Athenians for their support of the Greek city-states in Asia Minor. These city-states had risen up in revolt against their Persian rulers. After ruthlessly putting down the revolts Darius made plans to destroy Athens. A large Persian army was landed on the plains of Marathon to the south of Athens. An Athenian army of 9,000 men under the command of Miltiadis hurriedly marched to meet them (their physical stamina saw them cover approximately 33km in quick time with armour, hence the term Marathon to describe a modern long distance race) - surprising the Persians as they were setting up camp near the beach. Herodotus writes, "In the Battle of Marathon, some 6,400 Persians were killed, the losses of the Athenians were 197. The Persians fled to their ships.

Ten years later in 480 B.C. Darius' son Xerxes, who was now king on the death of his father, decided to avenge the loss at Marathon with another invasion on a far greater scale. The army was immense - numbering more than 180,000 fighting men, with the fleet accompanying the army around the coastline of Asia Minor and into Greece consisted of some 800 triremes, as well as smaller warships and a large number of supply ships. These were the largest warships of the period and the "capital ships" of their day. They consisted of three banks of oars and carried a crew of more than 200. A contingent of up to 50 fighting men was also carried on board. Logistical support for the massive land army in and around the rugged mountains and valleys of Greece would be impossible to transport by land but achievable by the sea. The Persians thus relied greatly on their supply ships which the warships had to defend if Xerxes was to succeed.

Thermopylae

Acting on advanced warning the Greeks were determined to stop the Persian land advance at Thermopylae, a narrow pass between the mountains and sea, and a steep hill. A fleet of 251 Greek triremes under the command of Themistocles (Athens) and Eurybiades (Sparta) was quickly assembled at Artemision, between the islands of Euboea and
I. Introduces the main narrative element of Leonidas and the 300 Spartans's fighting

The 300 Spartans held the pass long enough for their allies to arrive.
The Persians fought well that day—far better than in the actions which began to crowd the narrow channel which was now only about the length of the Persian flank, driving them towards the shore of the sea. As the Phoenicians came through the eastern entrance— their Egyptian fleet was still waiting at Salamis to fight for Athenian territory, and certain, off Euboea. Every man of them did his best for fear of Xerxes, feeling that the king's eye was on him.

Main Phase of the Battle

The Persian ships in the narrow channel had difficulty in turning to meet the enemy. Their speed would have been slow and in many instances they would have been broadside to the ramming Greek ships.

Herodotus recorded, "The greatest destruction took place when the Persian ships which had been first engaged turned tail; for those astern fell foul of them in their attempt to press forward. The enemy was in hopeless confusion; such ships as offered resistance or tried to escape were cut to pieces... Such of the Persian ships as escaped destruction made their way back to Phalerum and brought up there under the protection of their king's eye..."

By sunset the battle was over. "Amongst those killed was the son of Xerxes' brother, and many other well-known men from Persia. There were also Greek casualties, but not many; for most of the Greeks could swim. Most of the enemy, on the other hand, being unable to swim, were drowned." Though Herodotusnames many of the Persian commanders killed in the battle there is no mention of ship losses. "After the battle the Greeks towed over to Salamis all the disabled vessels which were adrift, and then prepared for a renewal of the fight, fully expecting that Xerxes would use his remaining ships to make another attack... But the Persians were defeated and Xerxes, realising his sea borne logistics lines were no longer intact, decided to withdraw. The losses suffered by the Persian fleet were thought to be a third or more of its total strength (450 ships). Although not a decisive defeat it was enough to force the Persians on the defensive. A year after the Battle of Salamis, they were decisively defeated in a land battle at Plataea which brought the Persian invasion to an end.

Conclusion

What would have happened if the Battle of Salamis had been lost? The Athenians had already made plans in the event of such a loss. Transports and warships were ready to evacuate the Athenian population from the island under cover of darkness. The Greeks were to be resented in the Greek colonies in either Sicily or Southern Italy. It was possible that the Greek cities faced with defeat by the Persians would have followed suit. For it is doubtful that the wall across the Isthmus between northern and southern Greece would have stopped the invaders. Athens and her allies would have dominated Italy, and perhaps there would have been no Rome— western history would therefore have taken a different course.

The 2000 Australian 'Green Paper' on defence, a public discussion document on how Australia should conduct its defence, cited the proliferation of ASMs in the region to cope with a re-think on the viability of surface ships in Australia's military strategy. While the paper was correct in articulating that there are a large number of different types and users of ASMs in the region, over 20 different types and versions used by approximately 12 countries, it failed to highlight their level of sophistication and thus their influence on a modern Navy's operations, such as those of RAN/RNZN.

The level of ASM technology found in the region ranges from the 1950s to the 1990s. Older missiles are the most prolific and due to their age, pose the least threat. Further, many fail to appreciate the huge reconnaissance and targeting requirements of ASMs. The lack of this critical element relegates the ASM, regardless of sophistication, to a shipboard defensive weapon restricted to horizon-to-horizon engagements only. It should also be noted that the ASM is not 100% effective nor immune to counter measures.

To complicate matters, the financial burden of acquiring training rounds and missile war stocks by many regional countries have led some to argue, with a degree of merit, that future use of ASMs may consist of harassing attacks only. This prediction is consistent with Argentine use of Exocet in the Falklands. One or two missiles fired at the periphery of a battle group with no real identification or targeting conducted. The Argentines had little training on the Exocet and only five missiles. Had their training with the missile been more complete and their war stocks larger, a different outcome from the conflict may have eventuated.

The following is a list of ASMs found in Australia's region with an explanation of each missile's characteristics. It is presented in isolation from the user's re-connaissance and targeting abilities and the couriers that ships could employ to defeat them.

SS-N-2 'Styx' a, b, c, d (4K30)

Entering service in 1958 with the Soviet Navy the 'Styx' is still used today by three regional Navies and can lay claim to the title of 'grandfather' of modern, non-Western, ASMs. Its most successful use came in 1967 when three missiles hit the Israeli destroyer Eliat. In 1969 the Styx was fitted to the submarine and was fired to sink the Israeli destroyer Eliat. In the same year the Styx was also fitted to the submarine and was fired to sink the Israeli destroyer Eliat. In the same year the Styx was also fitted to the submarine and was fired to sink the Israeli destroyer Eliat.
The first version, the SS-N-2a, employs an MS-2 1-band (8–10 GHz) active radar seeker with a barometric altimeter to locate its target. The missile uses various input technology and is fitted with a 454kg hollow charge warhead with impact and proximity fuses. Its radar seeker locks onto a target after eight revolutions, usually at about 12km, before the target is acquired. A gyroscopic sensor then guides the missile as radar returns are too close for the 1950s system to interpret. The missile cruises to the target at Mach 9 at an altitude anywhere from 100 to 350m out to a range of approximately 40km.

The SS-N-2b version was a major redesign of the original missile which included a new 513kg hollow charge warhead, slanted, increased range, the option of an IR seeker to complement the MS-2 radar, and the ability to use a 15kT nuclear warhead.

The SS-N-2c version was another major redesign with an MS-2A solid-state radar seeker which improved range, bearing accuracy, low-level target detection capability and improved clutter suppression/discrimination. The seeker also has improved ECM (Electronic Counter Measures) capabilities and a home on jam function. The barometric altimeter was replaced with a radio altimeter to enable sea-skimming attack profiles with a terminal altitude of 2.5m. The missile also has a maximum speed of Mach 1.3 and a range of 80km.

The SS-N-2d is similar to the SS-1 YJ missile but has an L-band (1–2GHz) radar seeker and an electro-optic seeker to supplement the radar in case of jamming.

Users: India (B, C, D), North Korea (A) and Vietnam (B, C, D).

**SY-1/HY-1 & HY-2**

In 1959 the Soviet Union sold SS-N-2a ‘Styx’ ASMs to China who then reverse-engineered them as the SY-1. However, further testing of the Chinese variant didn’t conclude until 1966 when it entered Chinese service and dubbed the ‘Silkworm’ by US intelligence. The missile suffered from simple ECM (Electronic Counter Measures) and an unreliable guidance system which caused the missile to drop height during flight.

**YJ-1 (C-801) & YJ-2 (C-802)**

The Chinese YJ-1 ‘Eagle Strike’ (C-801) refers to the export version was first revealed in 1984 but thought to have been under development since the mid-1970s. It is designed as a replacement to the ‘Styx’ based ASMs used by China and was developed during a period of Western influence, hence its resemblance to the French Exocet. The missile also has a maximum speed of Mach 1.3 and a range of approximately 40km.

The HY-2 ASM is thought to be an improved version of the HY-1 with greater range (150km) and a selection of seeker heads. In addition to the HY-1, the HY-2 is offered with an IR seeker (HY-2A) and a monopulse active radar seeker (HY-3G).

Users: Bangladesh (SY-1, HY-2), China (SY-1, HY-2) and North Korea (HY-2).

**SS-N-22 ‘Sunburn’ (3M80/3M82 Moskit)**

The SS-N-22 ‘Sunburn’ ASM epitomises the Soviet belief that fast is better than smart. The Sunburn ASM travels at Mach 2.5 to give the target the least amount of time to react and then initiate a hard and/or soft kill counter. It also demonstrates that the Soviets realised that their ASM technology was behind in the ‘smart’ area and susceptible to Western counter measures. The Sunburn entered Soviet service in 1984 and has a 300kg semi-armour piercing warhead and a liquid-fuel ramjet engine to maintain its supersonic flight profile which takes only two minutes to complete over its maximum range of 90–120km. The missile uses an INS with data link back to the launch platform to get it to a point 10–15km from the target where its radar seeker is activated. The missile’s seeker can function in three modes: active, passive home on jam and a combination of the two. Once the target is fixed the missile enters its terminal phase which can consist of either a sea-skimming, pop-up or melting manoeuvre. Once the target is acquired the missile descends to 7m and can execute evasive manoeuvres up to 10g, although this reduces speed and potentially accuracy given the missile’s speed. The missile also has no known re-attack capability which, given its very small acquisition window due to its supersonic speed, could produce inaccuracies.

Users: China, India.

**SS-N-25 ‘Switchblade’ (3M24 Uran)**

The SS-N-25 Switchblade represents a departure from standard Soviet philosophy and technology in ASMs. Rather than a large, technically simple, rocket-powered supersonic ASM, the SS-N-25 mirrors Western technology and thinking, it’s technically advanced, relatively small, has a turbo jet engine and a simple nose. Its resemblance to the USN Harpoon has earned it the title of ‘Harpoonski’. The missile was first seen at the 1982 Moscow air show. It has an active radar seeker, the ARGS-35, which operates in the 1.8 to 2.2GHz with a range of 280km. It can search in azimuth +45–45 degrees and +10–20 degrees in elevation. It has a 165kg semi-armour piercing fragmentation warhead with a delayed fuse and a range of approximately 130km. The missile uses an INS with radio altimeter to arrive at the target area. It cruises at Mach 9 at 5–10m until the radar, switched on at about 25km from the target’s expected position, locks on the ship, it then descends to 3m and then 1.5m for the final few seconds. The Switchblade can be salvo fired with a two second delay between launches.

**MM 38/AM 39/MM 40 Exocet**

Perhaps one of the more widely known ASMs, the MM 38 Exocet (French for Flying Fish) was first cleared for production in 1974. The MM 38 uses an ADAC 1-band (8–10 GHz) single axis active monopulse radar seeker, with a range of 25km against fast attack craft, and an INS with radio altimeter. The 165kg fragmentation warhead is linked to an autopilot controlled proximity and delayed impact fuse. The missile’s range is approximately 40km at Mach 9 using a solid rocket motor.

**MM 38 Exocet ASM at the point of launch.**

The MM 38 Exocet ASM features a number of improvements over its 1970s cousin. The Block 1 version has digital processing and a larger search and acquisition radar. The Block 11 has a new 1-band (10–20 GHz) Super ADAC radar seeker with improved ECCM performance, the ability to distinguish between different targets and with a chaff
ABDUL JAMIL. The Laksamana corvettes are armed with six Otomai Mk 2 cruises at 15 - 20 m until about 7kms from the target (known allowing the shtter to relay updated target information to the missile's INS. The missile is capable of sea-skimming attacks missile's full range a mid-course guidance system is fitted piercing warhead and a speed of Mach .9. To utilise the the Italian Navy. However, in 1973 work began on a new longer ranged Otomat known as the Mk 2. The turbo jet engine of the missile descends to 75kms. still with solid propellant rocket motor, and with a 155kg warhead with both impact and proximity fuses. Users: Singapore MM 38, Malaysia MM 38, MM 40 Block II and Thailand (MM 38).

OTOMAT MK 2
The Italian Otomat missile began production in 1976 for the Italian Navy. However, in 1973 work began on a new longer ranged Otomat known as the Mk 2. The turbo jet powered Mk 2 has a range of 18kms, a 210kg semi-armour piercing warhead and a speed of Mach 9. To utilise the missile's full range a mid-course guidance system is fitted allowing the shooter to relay updated target information to the missile's INS. The missile is capable of sea-skimming attacks shtting to 75kms. still with solid propellant rocket motor, and with a 155kg warhead with both impact and proximity fuses. Users: Taiwan

Gabriel

With its Arab neighbours acquiring large quantities of SS-N-2 from the Soviets, Israel being under an arms embargo, decided that it too should have an ASM. Work on the Gabriel ASM began in the early 1960s and was complete by 1969. The

sinking of the Israeli destroyer EILAT in 1967 further strengthened their resolve for an indigenous ASM. The Gabriel has a 150kg HE warhead and uses a semi-active seeker. When the seeker acquires the target through reflected radar energy the missile enters its terminal phase and descends to 4.5 - 6m. Gabriel can also be guided manually through an optronic system on the launch craft. This feature is generally used in severe ECM conditions. Gabriel is powered by a solid rocket motor propelling the missile to a speed of Mach 7 out to a range of 20kms. Users: Singapore and Thailand.

Hsiung Feng I/I

The Hsiung Feng ASM was thought to be a reverse engineered Gabriel ASM given Taiwan's use of the Gabriel 1 and II, but Taiwanese sources suggest a far more complex missile. Taiwan set to work on their own ASM in 1980 producing the Hsiung Feng I, which closely resembles the Israeli Gabriel II ASM. It uses a radar seeker with INS, radio
disriminator function. The manufacturer also claims that the missile has a lower RCS and IR signature than the MM 38 and able to be used in sea state 7. Its range has also been increased to 72kms, still with solid propellant rocket motor, and with a 155kg warhead with both impact and proximity fuses. Users: Taiwan

The Royal Malaysian Navy Laksamana corvette LAKSAMANA TUN ABDUL JABAL. The Laksamana corvettes are armed with Otomat Mk 2 ASM launchers as seen on the stern of the corvette. The Otomat has an excellent stand off range and mid-course guidance update ability but many wonder if the RAM can fully exploit the missile's capabilities. (RMN)

Harpoon

Harpoon first entered service in 1977 as a basic ASM and since then has undergone a number of Block improvements. In June 1982 the Block IB came with a sea-skimming capability and better ECCM. The Block IC, 1984, featured range, improved ECCM, better electronics, indirect attack capability via waypoint programming and terminal phase tactical options.

An Indian Airforce Mirage with a British made Sea Eagle ASM on its centerline station. The Sea Eagle is regarded as one of the region's most dangerous ASMs, given the level of technology in its seeker and guidance system. India is now the sole user of the Sea Eagle which it also employs for its own Sea King helicopters and long range maritime patrol aircraft (Indian Airforce)
The Littoral Problem

With 80% of the UN’s membership having a coastal border the littoral becomes an ever increasingly important and potential area of future conflict. Despite this fact, nearly every ASM presented so far has a major deficiency when used in the littoral/archipelagic battle space. Given the dependence on radar seekers the current generation of ASMs are unable to distinguish targets when backgrounded by land mass. The British withdrew the Sea Eagle ASM from service recently for this reason. Most ASMs in use today were designed with the classic open ocean naval battle in mind that had no landmass clutter to return multiple confusing radar pictures to the ASM.

The littoral also presents the problem of a compromised battle space littered with friendly, non-combatants, man-made structures and natural features which the ASMs listed are unable to discriminate against. Further, ASMs with a long range like Harpoon are more likely to continue on if its target is obscured by land and hit a non-combatant of a neutral flag or another politically sensitive asset. Use of such a missile then becomes less attractive to responsible militaries or those with few stocks. The recent Australian White Paper on Harpoon use in the littoral seems to have neglected this problem. In reality it could mean that its use will be restricted or banned.

The following five missiles, due to enter service shortly with Navies around the world, have been designed to overcome the littoral problem, giving their users a distinct advantage when operating in this environment.

Harpoon Block II

The new Block II Harpoon is designed to operate in the littoral environment through the application of a number of new and existing technologies. Its new guidance system incorporates technologies from two other existing weapons – the low-cost, inertial measuring unit from the JDAM (Joint Direct Attack Munition); and the software, mission computer, integrated Global Positioning System (GPS)/INS, and the GPS antenna and receiver from the SLAM-ER (Stand-off Land Attack Missile Expanded Response) missile.

The new mission computer can be fed a database of coastlines to allow accurate navigation and target/landmass discrimination. Its search pattern can also be controlled by limits placed on it by the GPS correlating landmass and coastline data. Upon finding the ship target the Harpoon Block II can attack in the same manner as the Block IIC.

The accurate navigation solution also allows the missile to overfly land and island clutter and discriminate against ships from islands or other natural or man made structures. An added benefit of this Block upgrade is the ability to attack land targets such as SAM sites, harbour facilities, runways, buildings etc. It is understood Boeing is keen to sell Harpoon Block II to the RAN for the Anzac upgrade program giving it a littoral ASM and land attack stand off capability, a perfect fit to the recent Australian White Paper’s focus for future operations.

Users: none in the region – at this stage.

Maverick

While the AGM-65 Maverick has been around for some time it’s the RAN’s employment of the new maritime enhanced version on its Super Seasprite helicopters which make it even more useful as an ASM. Given the missile’s IR TV passive guidance it does not suffer from the problems of land mass clutter or confusion as radar guided missiles do. Further, it can identify the target before firing thus having the option of aborting if the target turns out to be not the intended. Although the new Maverick is specifically designed to be used against ships it also retains its land attack capability giving the RAN a rather unique littoral attack capability against ships and shore installations.

Users: RAN.

Penguin

The Norwegian Penguin ASM was designed from the outset with the littoral problem in mind. Norway needed an ASM that it could use along its jagged coastline that would not fly into the first mountain the ASM’s radar seeker found. Penguin uses a passive IR seeker with an INS to find and attack ships near land masses. It has the capability to fly over land, make pre-programmed changes in height and direction and can also be programmed to fly over a selected number of ship targets before making its attack. It comes with a 120kg semi-armour piercing warhead and has a range of approximately 35kms. In its terminal phase the missile is programmed to dive at the ship’s waterline for maximum damage from blast and flooding. The missile will be used from the RAN’s Super Seasprite helicopters and hopefully the Seahawks.

Polyphem

One of the more interesting and useful missiles for the littoral environment currently under development is the German Polyphem. The missile is an optically guided rocket controlled by a fibre optic data link cable feeding IR TV images back to the firer – allowing for target identification and an indication of a hit. The IR seeker can detect targets at 8,300m or 42 seconds from impact and identify the type of ship at 1.350m or 12 seconds before impact. Its INS. with GPS, takes the missile to a point near the target where the firer then guides the missile during the terminal phase.

Polyphem has a range of approximately 60kms and a 20kg fragmented shaped charge warhead. It is immune to ECM and can be used against and by ships, shore installations, vehicles and helicopters.

Users: none at this stage.

Triton

The German Triton missile is very similar to Polyphem except that it is used by submarines while submerged against ASW helicopters, fixed wing aircraft or against land targets. Four Triton missiles are housed and fired from a launch container the same size and shape of a standard 533mm heavy weight torpedo which is loaded into the submarine’s torpedo tube like a regular torpedo. Upon reaching the surface the missile climbs and accelerates to its cruise phase where it behaves as Polyphem would with the same type of targets capable of being engaged. A fibre optic cable links the missile with a stand alone console in the submarine’s control centre displaying IR TV images from the missile’s seeker. Triton is due to be tested fired from a submarine in 2003 and fitted to the German Navy’s Type 212 SSNs.

Users: none at this stage.

Conclusion

Many ASMs currently in service around the region will experience problems when used in the littoral, some will be totally useless. Also, the age and level of sophistication of most makes countering them a somewhat straightforward exercise. The reconnaissance requirement for the proficient use of any of the region’s ASMs is often a forgotten and neglected crucial factor in their successful use. The high cost of more advanced ASMs makes them either unattainable by many, or forces them to be ineffective users relying on the confidence trick/huff of deterrence. All these factors contribute to reduce the effect and influence of the ASM in the littoral environment. However, technology, in the form of new missiles such as Harpoon Block II, Maverick, Penguin, Polyphem and Triton, can adduce littoral deficiencies. Proficient users make the littoral battle space an even more dynamic and dangerous domain even for the professional Navies.

It should be noted that despite the deficiencies of the ASMs listed earlier the littoral does remain a dangerous place for the surface Navy. As ASM radar seekers suffer from increased radar clutter from land so do many ship based radars which can be rendered blind to an ASM attack. However, many Navies have already addressed this problem through development and improvements in surveillance and hard and soft kill counter measures. Despite this, Western Navies still need to be extra vigilant in the littoral.

*This article first appeared in Asia-Pacific Defense Reporter and is reproduced with the Editor’s permission.*
Output for which the Chief of Navy is responsible, together with Navy contributions to other Defence Outpugs:

Navy Systems Command integrates centres of knowledge and expertise in key technology areas with logistics requirements, personnel (including training) and safety. It is the provider of Navy services required by other elements. It is responsible for command, control, communications, computers and intelligence (C4I); the delivery of personnel and training; systems support; safety, certification and audit; and command of fleet bases and establishments.

The core of this structure are the Force Element Groups (FEGs), as the centre of capability output and management with responsibilities direct to the Chief of Navy for capability management and direct to the Maritime Commander for operational output delivery. The FEGs are divided into Aviation, Submarines, Surface Combatants, Patrol Forces, Amphibious and Fleet Support, Hydrography, and Mine Warfare and Clearance Divisions. Navy Systems Command and Support Command (Navy) provide services commonly required to some extent by all FEGs. The FEGs define and articulate their requirements, priorities and expectations from other agencies and service providers. They monitor the delivery of goods and services to achieve goals defined by the Chief of Navy and the Maritime Commander.

Navy Headquarters supports the Chief of Navy in directing Navy capability management and the delivery of the Defence

A careful balance needs to be maintained by countries such as Australia to ensure that capability requirements are properly met while such national benefits are gained over the long term. The fact that many elements of maritime capability seek to exploit the latest advantages in technology as they develop means that accepting technical risks is an inevitable accompaniment of this process. Success in meeting this challenge depends upon close co-operation between all levels of Government, Defence and industry.

**MARITIME LOGISTICS**

Logistic support exists to ensure that combat forces can meet readiness levels and be deployed, sustained and redeployed to meet the operational aims of the commander. Logistic support includes the provision of the stores and spare parts required by units, the supply and re-supply of fuel and lubricants, ammunition and food, and the provision of medical support, maintenance support, personnel support and hotel services. Maritime logistic support exists to provide these services to maritime combat units.

In practice, logistic support will often be conducted on a joint basis and logistic related issues lend themselves readily to the economies of effort possible by integration of the needs of the various environments. There are, however, significant differences between the three Services logistical systems. The strategic, operational and tactical levels of logistics consist of many support organisations manned by ADF Defence civilian personnel and contractors. Continuity of logistic support is paramount to combat success.

The naval logistic system is structured very differently to those of other Services because of the differences in the environment in which the Navy operates. Generally speaking, the Navy's fundamental unit of combat is a warship. Its logistic capability is inherent in the design. Ships deploy from their home ports with spare parts typically of an endurance level of 90 days, rations typically of 30 days and with large quantities of fuel onboard.

For example, HMAS WESTRALIA conducts an underway replenishment of HMAS ADELAIDE. Logistics support at sea is imperative if a Navy is to keep ships on station. (RAN)

Naval forces are therefore largely self-sustaining for long periods if supported by an underway replenishment group and the "pull" forward of mission critical supplies. This contrasts to the "push" system used for land forces where the fundamental unit of combat is the soldier who has limited capability and must be properly equipped by the logistic system.
of large quantities of material. This means that much logistic effort, whether directed towards maritime combat forces or not, will be by sea. Shipping must thus be considered a joint logistic asset. Its protection may well become a critical issue within a campaign that has few other apparent maritime dimensions.

Shore Support

Shore support facilities such as the submarine refueling establishment in WA are vital to train new submariners and sharpen the skills of existing submariners. (RAN)

The logistic capacity of maritime forces can also act as a force multiplier. Ships can provide a large range of logistic support to land and air units and are especially useful in providing these services in the interim while single services’ support units are deploying. That maritime forces are largely self-sufficient are not adversely affected logistically by different operating areas to the same extent as land or air forces remains a strategic advantage. Furthermore, although the concepts of lines of communications can be applied to both land and maritime environments, they do not mean the same thing and pose very different problems of security and protection.

Shore Support

The logistic support process is founded directly upon shore support, a concept which embraces not only service facilities, such as bases and supply depots, but private contractors, both domestic and international, as well as formal arrangements with allied governments for access to material and technical support. The sophistication of such support will depend upon the points within the logistic chain that it operates, as well as the urgency of the need.

The operations of deployed maritime forces can be greatly assisted by the provision of local host nation support. Even at its simplest, in the form of sheltered anchorages, such support can considerably reduce the difficulties of re-supply and provide the opportunities for stand-downs and deep maintenance which will considerably increase the length of time which units can remain operationally efficient in area. However, it is also true that such host nation support is not an absolute necessity for maritime forces, provided that sufficient seaborne support exists to accomplish the mission.

Reach and Sustainment

However capable the maritime combat forces, their potential is enormously increased by the presence of support vessels. In fact, unless maritime units are acting purely in coastal defence roles at short distances from their shore bases, there are very few modern maritime operations which can be conducted effectively without such support. At its most sophisticated, extending to repair ships as well as stores, ammunition, food and fuel supply units, such support can make maritime combat forces indeﬁnitely independent of the shore. This level of capability is currently possessed in full measure only by the United States and to a degree by the United Kingdom. Smaller forces, such as those of Australia, nevertheless achieve a high degree of force multiplication by the possession of replenishment ships which are primarily conﬁgured to provide liquid fuels but can also supply limited amounts of ammunition, stores and food. Within the Australian context, a credible surface task group in extended maritime operations will always include a replenishment ship. The inter-operability of most maritime forces for replenishment is itself a signiﬁcant force multiplier which allows the rapid combination of coalition forces in an emergency.

Larger combinations of maritime forces can achieve economies of scale in the critical areas of spares, stores and repair expertise. Mechanisms exist for the stock holdings of vital spare parts to be “screened”, such that they can be transferred from one unit to another which has a deﬁcit. This procedure is regularly conducted during international exercises and operations and extends to the loan of expertise to rectify deﬁcit problems. The process is greatly assisted by commonality in equipment between Navies.

Hydrography

Hydrographers in a small boat conduct a survey of the approaches to Dili Harbour during the East Time Operation. Without accurate underwater charts Navy’s ability to operate in unfamiliar water is greatly reduced. (RAN)

Naval hydrographic forces work in peacetime to survey and chart littoral and ocean areas in accordance with strategic guidance. Much of this effort is focused towards the requirements of commercial shipping, generally aimed at shortening trade routes, reducing existing uncertainties or anomalies from older surveys and allowing deeper draught ships or fishing vessels to operate safely. There are obvious ﬂows onto combat forces from this activity, but surveying work in peacetime can also be used to improve the understanding of areas in which operations may take place. These can involve either the littoral, including beach surveys which extend to the hinterland of possible landing areas for amphibious forces, or deep water, particularly where submarine operations are involved. These activities give combat forces increased freedom of manoeuvre.

Hydrographic units also have important roles during conﬁlict. They are required to conduct precursor surveys for amphibious operations or to act in conjunction with mine countermeasures in assessing shipping routes which will be safe from mines.

Oceanography

Oceanography plays a vital role in undersea warfare, not only for submarines themselves, but also for anti-submarine and mine warfare forces. For efﬁcient operations, these units require not only an extensive knowledge of the water mass in which they are operating, but also the means to analyse prevailing conditions and predict sensor and weapon performance. In peacetime, much effort must go towards the development of sophisticated databases of watermass characteristics, such as temperature, current and turbidity, and the reﬁnement of predictive models. In addition to training and exercises, these activities contribute much to sensor and weapon development for the long term. In time of conﬂict, such efforts may require to be both continued and concentrated within speciﬁc operational areas and the means provided to planners and operational units to exploit such knowledge in the most effective ways. This requires the maintenance of a core of personnel expert in the subject and skilled in providing the appropriate advice and guidance.

Meteorology

Similar requirements apply to the effects of weather on maritime operations. Planners and commanders need to draw on comprehensive databases, well developed prediction systems and expert analysis. In time of peace, the gathering of data within expected areas of operation is a constant activity by all units, while the effects of weather need to be clearly understood by those developing operational concepts and new weapons and sensors. In the operational environment, meteorologists are vital contributors towards ensuring that units are deployed prepared and operated to best effect within the prevailing conditions.
**Townsville** by ADI Limited through a capability of the Australian Defence concurrently signed with ADI Limited contract for SI0.66 million has been announced the signing of a S32.73 Watercraft for the Australian Army. Minister for Defence Robert Hill has announced the signing of a S32.73 million contract with Newcastle shipbuilder ADI Limited for the design and construction of six Amphibious Watercraft for the Australian Army. Senator Hill also announced that a contract for $10.66 million has been concurrently signed with ADI Limited to provide 15 years through life support for the watercraft. These lightweight vessels, to be built from aluminum and powered by two diesel engines and waterjet propulsion, will build on the total amphibious capability of the Australian Defence Force. The new watercraft will enable the Army to deploy greater amounts of tanks, vehicles, and supplies from ship to beach in a significantly shorter time than is currently possible from ship to beach in a significantly shorter time than is currently possible.

The new watercraft will improve the discharge rate of unloading cargo by more than 30%.

Senator Hill said the new watercraft will be carried on the decks of the Royal Australian Navy ships HMAS MANOORA and KANIMBLA. The craft will be based in Townsville at the 10 Force Support Battalion at all other locations.

"This project is expected to create 40 jobs in the Newcastle area." Senator Hill said.

When the watercraft are introduced into service they will be maintained in Townsville by ADI Limited through a sub-contract with a local company, which will create additional employment in the area.

The first watercraft is planned to undergo extensive trials late next year with the final craft expected to be finished in 2005.

**RAN patrol boat tenders short listed**

Three companies have been short-listed to tender for the supply of patrol boats for the Royal Australian Navy, after they were endorsed by Defence Minister Robert Hill.

The short-listed tenders are ADI, Defence Maritime Services partnering with Austal and Tenix.

ADI will construct the boats in Newcastle, DMS and Tenix in Perth providing significant economic and employment opportunities in these areas.

A competition for the final short list to go on to stage two of the contract process was intense highlighting the fact that Australia has a competitive small vessel ship building industry.

Nine companies provided tenders, seven of which qualified to produce the vessels.

The RPB project is designed to provide replacements for the RAN's Freemantle-class patrol boats (FCPBs). The new Patrol Boats are expected to cost approximately $375 million. They will be expected to provide over 3,000 operational sea days per year, 1,800 days will be directed towards Coastwatch operations, plus a surge capacity of 600 additional days per year to deal with short warning missions.

The current FCPB fleet averages around 2,700 operational sea days per year. The new boats will be larger and have improved staying abilities over the FCPBs as well as a range of 3,000 sea days (or 25% greater than the FCPBs). Maximum continuous speed shall be no less than 25kn.

The short-listed companies will be invited to provide detailed tender proposals by the end of October. Defence expects to be in a position to recommend to Government a preferred tenderer by late this year, with a view to signing the in the new year.

**Sixth Indian submarine to have Class-S missile system**

The Zvezdochka shipbuilding plant in Severodvinsk is to refit, repair and upgrade the Indian Navy Kilo diesel-electric submarine INS SINDUGOSH under the terms of a contract signed in Delhi between Russia's naval export agency Kormorantexport and the Indian Ministry of Defence.

The boats will be armed with a 25mm stabilized lightweight gun (similar to that found on the Hoog class MCM vessels supported by 2.12mm machine guns).

The new Patrol Boats are expected to receive a Class-S strike missile system, consisting of an air-launched vertical launch weapon fired from a representative gun, a rocket-propelled 877EKM Kilo class submarines, which are currently deployed in the Royal Australian Navy.
gun launch. The 18-mega joule propellant charge impacted the projectile like a 40 ton hammer travelling at 70 miles per hour, almost immediately accelerating the round to 1,875 mph. The test also demonstrated a flight range of 39 nautical miles in under four minutes time of flight and airframe stability and control with proper internal system operation.

This guided flight test successfully completed the subsystem and system level design validation tests of the ERGM guidance, control and propulsion systems. The final validation tests are planned for next year after completion the subsystem and system introduction of the new unitary propulsion systems. The final validation tests are planned for next year after completion of the subsystem and system introduction of the new unitary propulsion systems. The final validation tests are planned for next year after completion of the new unitary propulsion systems.

"The real accomplishment in this test was demonstration of GPS acquisition and navigation over an extended range after a tactical gun launch, which we did flawlessly," said Brian O’Cain, Raytheon’s ERGM program manager.

"Unfortunately, during range safety footprint constraints and the current gun position prevented us from stretching ERGM’s legs and flying to a longer range target. With this launch, energy and rocket motor we could have easily exceeded 50 nautical miles."

**Former Navy League Federal President Dies**

John Brooke Howse KSt VD, Federal President of the Navy League from August 1968 to December 1971 and long-serving ACT President died in Canberra in July aged 88.

John Howse served in the RAN during World War II and retired at the rank of Commander RANVR. He joined the Navy League soon after the war and became closely associated with the Sea Cadet movement. As a member of the Australian Sea Cadet Council, with Council Chairman Captain Neil Bosse RAN (the Director of Naval Reserves) and Council colleague Geoff Evans (who succeeded him as Federal President), he toured Australia and expressed with State representatives the future of the Australian Sea Cadet Corps, an increasingly expensive responsibility of the Navy League. The report of the three-member committee led to the formation of the Naval Reserve Cadets (now Australian Navy Cadets) in 1973 as a naval responsibility. John and his wife, Valerie, continued to support the cadets as well as other organisations in Canberra for many years.

John Howse had a distinguished career in business and was a member of the Federal Parliament representing the ACT from 1967-73.

**Lockheed Martin-Northrop Grumman Team selected for US Coast Guard Deepwater project**

The United States Coast Guard today awarded Integrated Coast Guard Systems (ICGS) a contract to carry out a far-reaching modernisation program for the agency’s Deepwater forces – the ships, aircraft, command and control, and logistics systems that protect the United States and support the Coast Guard’s many missions. The contract was announced in a ceremony held in Washington, D.C.

ICGS – a co-equal partnership of Northrop Grumman Corporation and Lockheed Martin Corporation – was awarded a contract valued at US$11 billion to modernise the Coast Guard’s Deepwater assets over a 20-year period. The program’s total potential value over three decades is estimated at approximately US$17 billion. Deepwater is the largest recapitalisation effort in the history of the US Coast Guard and will involve the acquisition of up to 91 ships, 35 fixed-wing aircraft, 34 helicopters, 76 unmanned surveillance aircraft, and upgrade of 49 existing cutters and 93 helicopters, in addition to systems for communications, surveillance and command and control.

"The nation depends on the Coast Guard to protect our homeland and secure over 95,000 miles of shoreline, save lives and protect the environment," said Lockheed Martin chairman and chief executive officer Vance D. Coffman. "We are proud to partner with the Coast Guard to assure its ability to meet its evolving missions through a transformational modernization program."

Coast Guard Commandant Admiral Thomas H. Collins said that the Northrop Grumman / Lockheed Martin joint venture offered a superior solution, a strong management approach, a low-risk implementation strategy and an Open Business ModelT, all of which address the Coast Guard’s modernisation needs. This performance-based contract will develop, acquire, and sustain an affordable, integrated system of surface, air, command, and logistics assets, while maximizing operational effectiveness at the lowest possible total ownership cost.

ICGS will manage over 100 companies from 32 states, as well as four international teammates, to implement its comprehensive plan for the Coast Guard. The ICGS Open Business ModelT approach maximizes competition and assures best value to the Coast Guard and the American taxpayer throughout the life of the program. ICGS has structured a program that will greatly enhance the US Coast Guard’s core system capability within the first five years of the contract, and ensure a low-risk transition to the full vision of the Deepwater system. In the first five years, ICGS will:

- Provide a network centric capability of robust C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) systems to the Coast Guard and the American taxpayer throughout the life of the program.
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of the art developments derived directly from France's submarine building programs. The Scorpene offer excellent state-of-the-art effectiveness ratios.

**FEARLESS for Brazil?**

It is understood that the Brazilian Navy is negotiating with the UK to acquire the new RN amphibious assault ship HMS FEARLESS. FEARLESS was the last steam-powered ship in the RN and retired from service in March of this year after 37 years of service. During its final eight-month deployment the vessel operated in the Gulf as part of Exercise 'Sarf Sateen II' (see THE NAVY Vol 64 No. 1 24-28) and then participated in Operation 'Veritas', the UK contribution to the US-led Operation Enduring Freedom.

Currently alongside at Portsmouth Naval Base, FEARLESS is due to move to a lay-up berth in the base pending a final decision on its disposal.

**Greece orders fourth Type 214**

Howaldtswerke Deutsche Werft (HDW) has won a EUR700 million (US$695m) contract to build a fourth Type 214 air-independent propulsion (AIP) submarine for the Hellenic Navy. The boat, like two of three already on order, will be constructed at the HDW-owned Hellenic Shipyards in Skaramanga near Athens.

It is understood that Brazil is interested in buying both FEARLESS and its decommissioned sister ship, HMS INTREPID, which has been laid up at Portsmouth Naval Base for several years as a source of spare parts, with the intention of further cannibalising INTREPID to provide a source of spares and components for its sister vessel.

However, there are now contrary indications that while INTREPID will be used as a source of spares, the ship itself may not form part of the sales package.
Corvettes will also be able to carry one purpose gun supplied by Denel. The powered attack submarines (SSNs) in 24 Plans call for a total of three SSNs to be constructed.

An intense archaeological investigation. U.S. Navy divers assigned to Mobile Diving and Salvage Unit 2 in Hampton Roads, (USNI) will still conducted to arrive in Guam instead of the US is seen as a way of increasing the availability of submarines to and from a patrol area, home porting of assets outside the US, and allows the vessel to operate with the Northern Fleet based at Nerpichya in Severodvinsk on 26 June.

The Republic of China (Taiwan) has launched the first prototype of a 150-tonne stealth-designed fast attack missile patrol boat (PCFG) in Kaohsiung.

Developed by the ROC Navy's Ship Development Centre, the design is intended to reduce the radar and infra-red signatures of the patrol boat. Dubbed the 'Kuang Hua' (Glorious China) programme, the navy plans to begin building 30 boats in October 2003 to replace its ageing 47-tonne Hai Ou-class (Sea Gull) PCFGs.

The new patrol boats will carry four Hsiung Feng-2 (Brace Wind) anti-ship missiles (see pp 10-11 this edition), compared to the Hai Ou-class, which only carries two carriers Hsiung Feng-1 missiles.

Typhoon SSBN completes refit

The nuclear-powered ballistic missile submarine (SSBN) TK-208, originally commissioned in 1985, completed its scheduled refit at the Sevmashpribiyatye shipyard at Severodvinsk on 26 June.

After trials (reportedly scheduled to last until 2005), the TK-208, now renamed DMITRI DONSKOI after the legendary Muscovite hero, will rejoin the Northern Fleet based at Narvikha in Zapadnaya Litsa. The refit was intended to keep the submarine in service until 2018.

The refit has taken over 10 years to complete due to shortages of resources and has included upgrading the submarine through the use of systems and components associated with the upcoming Project 955 Borei-class SSBN.

The main armament of the Typhoon-class SSBNs remains 20 RSM-52 (SS-N-20 'Sturgeon') submarine-launched ballistic missiles (SLBMs).

Historic gun restored

A significant piece of Australia's military history is now in better shape thanks to the men and women of HMAS KANIMBLA. While operating near Christmas Island during the ships recent OP RELEX II Deployment, several sailors and soldiers from KANIMBLA expended much blood and sweat to refurbish a 6-inch gun emplacement and observation post which overlooks Flying Fish Cove.

The 6-inch gun was made in 1900 and installed at Christmas Island in late 1940. It was manned by men from the Royal Artillery who made up part of the island's garrison. Christmas Island was, and still is, a large supplier of Phosphate rock. which showed substantial weathering and the emplacement and observation post were overgrown with trees and weeds.

An offer was made to the Christmas Island Shire Council to refurbish the gun emplacement site and this was eagerly accepted by the Councils Engineer Mr Gary Dunt (Ex WOETC) and the Island Administrator (CDRE Bill Taylor, RAN Retired).

KANIMBLA's volunteer work parties, consisting of both Navy and Army personnel embarked, turned to with a will and stripped the gun of its layers of rust, repainted it and the emplacements external walls and removed 20 years worth of durt, rubbish, and weeds. The trees surrounding the observation post were cut down as were 50 metres of thick vegetation on the seaward side of the gun to allow both to be more visible to visitors to the island. Some concreting was also undertaken to strengthen the emplacement.

The historic 6-inch gun on Christmas Island after it was restored by the crew of HMAS KANIMBLA.

Of CORPS CHRISTI in October 2002. The USS SAN FRANCISCO will join it in November 2002 and a third still undetermined boat will arrive in February 2004.

Home porting of assets outside the US is seen as a way of increasing the availability of the capability. By basing submarines at Guam instead of the continental US the transit time for those submarines to and from a patrol area, such as the Persian Gulf, is reduced by half. Although the plan requires an entire crew rotation after each patrol this is seen as a minor point with the advantages of having more assets available outweighing any other issues.

USN to home-port SSNs at Guam

Initial USN home-porting of nuclear-powered attack submarines (SSNs) in Guam is on track to begin later this year. Plans call for a total of three SSNs to be based there, starting with the USS CITY OF CORPS CHRISTI in October 2002. The USS SAN FRANCISCO will join it in November 2002 and a third still undetermined boat will arrive in February 2004.

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The historic 6-inch gun on Christmas Island after it was restored by the crew of HMAS KANIMBLA.

The Christmas Island Shire Council provided most of the tools, concrete and paint for the venture with KANIMBLA supplying the muscle. The refurbishment took place over several weekends with groups of sailors and soldiers, voluntarily giving of their own time to ensure this important part of Christmas Islands history remains intact and in good condition.

The site will become part of the Christmas Island Museum linked to the nearby Colonial Administrators House, which is also being refurbished and due to be opened as a Museum in September 2002.

By Lieutenant Commander Greg Swain

Australian companies win systems contract for German warship design

Defence Minister Robert Hill and Industry Minister Ian Macfarlane have congratulated the Australian companies CEA Technologies and Saab Systems Australia for their selection in a new warship design announced by Blohm + Voss GmbH in Germany.

The CEA-Saab Naval Advanced Air Warfare System was unveiled at the MECON 2002 Conference in Hamburg which was attended by naval staff from over 40 countries.

The Australian system was specifically designed for the Blohm + Voss new generation frigate design. The proposed 3,500 tonne frigate would be the first in the world to incorporate CEA's active phased array radar. This radar allows vessels to engage multiple targets at extended range and similar radars have previously only been fitted to ships of nearly twice the size.

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Mr Macfarlane said: “This landmark selection of Australian companies to provide leading edge technology in a highly competitive international market clearly illustrates the technical knowledge and innovative practices Australian defence industry possesses.”

**VADM Taylor passes away**

It is with regret that THE NAVY magazine notes the passing of a former Chief of Navy, Vice Admiral Rodney Graham Taylor.

VADM Taylor joined the RAN in 1954 as a Junior Entry Cadet Midshipman and graduated from the Royal Australian Naval College in 1957. He went on to serve both at home and abroad.

In addition to serving in a number of RAN ships, he also served in Her Majesty’s Yacht BRITANNIA and later qualified as a sub-specialist navigator.

VADM Taylor saw active service in Vietnam and was mentioned in despatches during the first deployment of the guided missile destroyer, HMAS BRISBANE.

Other significant career highlights included service as Commanding Officer HMAS VAMPIRE (1979-80), Commander Third Australian Destroyer Squadron and Commanding Officer HMAS TORRENS (1983-85); Deputy Fleet Commander and Chief of Staff (1987-88); and the inaugural Commodore Fiction (1989).

In 1990 he was promoted to Rear Admiral and held the appointments of Assistant Chief of Defence Force - Operations (1990-91) and Deputy Chief of Naval Staff (1991-94). VADM Taylor was made an Officer in the Order of Australia in 1992.

Promotion to the rank of Vice Admiral followed, along with appointment as Chief of Naval Staff in March 1994. VADM Taylor served in this role with great distinction. During his command, VADM Taylor oversaw considerable development and change in the Navy. In this time the first of the Anzac class frigates and Collins class submarines entered service.

Feeling strong commitment to Navy’s people, he continuously stressed the importance of preserving Navy’s values, tradition, ethos and professionalism during the defense efficiency review and the subsequent defense reform program. In February 1997, VADM Taylor’s title became Chief of Navy.

**COMMAND CHANGES**

As reported elsewhere in THE NAVY, several changes in senior ADF appointments took place mid-year; the following comments relate only to those involving naval personnel.

The principal change was that of Chief of the Defence Force (CDF). Admiral Chris Barrie handing over to General Cosgrove on completion of a 4-year term. Professionally well qualified and with a Masters Degree in Business Administration, Admiral Barrie commended the ADF during a difficult period of ‘peacetime’ stringency and sudden operational demands that stretched the resources of the armed forces to the limit, the demands were met but continue as a challenge for General Cosgrove. Apart from administrative skills Admiral Barrie must be given credit for the ADF’s part in the East Timor venture, an operation for which the armed forces received much praise.

The new Chief of Navy Vice Admiral Chris Ritchie, RAN, AO

RADM Rowan MoFFIT, Deputy Chief of Navy.

The RAN’s chief also changed: Vice Admiral Chris Ritchie replaced Vice Admiral David Shackleton as Chief of Navy (CN) at the end of the latter’s 3 years as head of arguably the most stretched of the services. Rather like Admiral Barrie with academic as well as professional qualifications, on appointment VADM Shackleton tackled his responsibilities with vigour and introduced changes in the RAN too numerous to record in this article – and not all accepted with glee by Old Navy personnel even if they were probably necessary.

In the writer’s view VADM Shackleton did much to restore the status of CNS/CN as head of his service. For some time as
a result of interminable changes in Defence command arrangements, the role of chiefs of the Navy, Army and Airforce appeared to becoming less important than hitherto. David Shucklestone made it quite clear he was the RAN’s ‘boss’ even if his operational responsibilities remained shared.

In terms of operational experience, VADM Ritchie took up his appointment with the advantage of having served as Commander of the Australian Theatre (COMAST). Maritime Commander, Captain of the destroyer BRISBANE during the Gulf War and other significant naval and defence appointments: Given the troubled international scene his appointment would seem to be a bonus for the Navy - and for Australia.

The Deputies

If their immediate superiors are professionally experienced, the same can be said of the deputies who were also appointed mid-year. Due to space considerations it is hard to do justice to the careers of any of the officers named in Observations: that of the Vice Chief of the Defence Force (VCDF), VADM Russ Shalders, is no exception. Since graduating from the RANC in 1971 VADM Shalders has had a wide variety of sea and shore appointments and is regarded as one of the advanced courses in the UK, Australia and USA. His sea commands include the PNG Defence Force patrol boat SAMARAI (in 1975 as a Lieutenant) and HMAS SYDNEY, DARWIN during the Gulf War and PERTH. He has also served as Commodore Flottillas and came to the public’s notice when as a RAN patrol boat SAMARAI (in 1975 as a mid-year.

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Many existing Fleets were rendered obsolete overnight by these changes. The submarine emerged as a future weapon system - but reliability and technology were limitations in the early years. Also, the standard role envisaged by the Royal Navy for the submarine appears to have been in coastal defence, or as a mobile mine field in advance of the battle fleet.

Both tactics failed in WWI.

The German Navy, not for the last time, demonstrated an ability to develop the capability, technology and tactics required for submarine operations and apply with great effect in the strategic sea denial operations undertaken during WWII.

I should reflect on the foresight and boldness of those who acted against the traditionalists of the day and built two submarine fleets for Australia. AE 1 and 2, for the embryonic RAN. The Australian ships were amongst the first fitted with radio - a capability which was to play a small, but critical part in the Gallipoli campaign.

The Birth of The RAN

In September 1906, Deakin announced an initial three-year programme of eight coastal destroyers and four torpedo boats - following Creswell's recommendations. However, the plan made little progress.

In December 1907, following discussions at the Imperial Defence Conference, a new ship was ordered. Commanders Colquhoun and Clarkson carried out a survey of the Australian Navy's needs.

In March 1909, the First Lord of the Admiralty rose in the House to point out the accelerated battle shipbuilding programme of Germany, which meant the Royal Navy would lose numerical superiority by 1912. Alarm spread through the Empire. Germany had usurped France and Russia as the British Empire's most likely foe.

The Changing Technology of Naval Warfare

The period at the turn of the century and establishment of the Commonwealth coincided with rapid changes in naval technology. The Germans were rapidly overhauling the British at the forefront of naval technology and out building them. The arrival of Jackie Fisher as First Sea Lord in October 1904 galvanised the Admiralty and accelerated the changes underway to introduce modern technologies into the Royal Navy. This was focussed on big gun battleships; greatly improved rates of fire, longer range guns and developments in fire control, which gave greatly improved accuracy. The Dreadnought class battleships epitomised these developments. They were quickly followed by the higher speed but more lightly protected Battle Cruisers. The move from coal to oil fired turbine driven ships started in destroyers and spread quickly to the battleships, with consequent increases in speed and endurance in these ships. Adoption and development of radio proceeded at a pace akin to the internet today. Mobility and gun power were the new measures of capability.
Creswell promoted and knighted as the first Naval member. The onset of WW1, when the Fleet was placed under greater independence for the RAN was rapidly overtaken by Navy. Australian Commonwealth Navy became the Royal Australian Navy, Admaralty control. Support and administration or the new fleet. Paymaster-in-Chief Eldon fortunate to have the services of Paymaster-in-Chief Eldon bases and so on. A comprehensive infrastructure of victualling yards and Fleet Unit to be in a state of readiness for the war which amounted to a stupendous administrative achievement and torpedo training. These were later transferred to Flinders Naval Base. 1912.

The cruiser ENCOUNTER was borrowed from the RN for the Boxer rebellion in China. He was heavily involved in the design and construction of the three River Class destroyers which were built by various Ministers of the day, who commissioned him to purchase and establish the small arms factory at Lithgow. This was in addition to his naval duties; he was appointed member of the Naval Board at its establishment in 1911. The initial term of the Naval Board was not a happy one. Clarkson, well versed in Naval board, was secretary to the Board. He correctly recognised that this could only be achieved with the agreement of the Australian Navy, controlled by the Commonwealth Government, from the earliest. He settled on the strategic objective of an independent Australia Navy and appeared determined to exploit for his own advantage his wide experience and lacked a stable policy. Clarkson's technical and financial circumstances facing Britain provided the mother of new ideas. The decision made, the Royal Navy was uninterested in providing talented personnel to support the endeavour. He correctly recognised that this could only be achieved with the agreement of the Australian Navy, controlled by the Commonwealth Government, from the earliest. He settled on the strategic objective of an independent Australia Navy and appeared determined to exploit for his own advantage his wide experience and lacked a stable policy. Clarkson's technical and financial circumstances facing Britain provided the mother of new ideas. The decision made, the Royal Navy was uninterested in providing talented personnel to support the endeavour. He correctly recognised that this could only be achieved with the agreement of the Australian Navy, controlled by the Commonwealth Government, from the earliest. He settled on the strategic objective of an independent Australia Navy and appeared determined to exploit for his own advantage his wide experience and lacked a stable policy. Clarkson's technical and financial circumstances facing Britain provided the mother of new ideas. The decision made, the Royal Navy was uninterested in providing talented personnel to support the endeavour.
PRODUCT REVIEW

The Magnificent 9th –
An Illustrated History of the
9th Australian Division 1940–46
By Mark Johnston

The book has excellent coverage of the 9th's exploits in the darkest hours of the Second World War. The Magnificent 9th:
An Illustrated History of the 9th Australian Division 1940–46, is a well researched, well written and well illustrated informative history and is highly recommended reading.

Mutiny on the Globe:
The Fatal Voyage of Samuel Comstock
By Thomas Farrell Heffernan

Heffernan does a good job of tracing the influences on Samuel and his formulation of the idea. He then describes in quite gory detail how Samuel goes about conducting the mutiny, including how the Captain, officers and non-cooperative crewmembers all met extremely violent deaths. The mutineer’s use of oversized whaling tools to do the job is, to say the least, horrifyingly innovative.

Having reached the pivotal point in Samuel's grand plan for realising his 'destiny', the remainder of the story follows the consequences for Samuel and the remaining crew. Needless to say, this is where things went awry. Having reached the Mill Atoll in the Marshall Islands, the men discover that the natives' temperament is quite different to Samuel's romantic conception. All but two are killed, and the survivors are kept as a mixture between a slave and a pet until a daring rescue almost two years later.

Heffernan's treatment of the wider historical context in which the events took place is an intriguing aspect of this book. This was a time when growing up in New York was unimaginably miserable; stagnant and squalid, with a nightmarish fire hazard and no reliable water supply. I found it interesting how Manhattan had an inland lake that had to be drained and filled when effluents, rubbish, and the dumping of dead animals had inversely polluted it (white Broadway, on the other hand, was lined by poplars and four-story homes). It was a time when harsh reality forced youth to mature quickly; as his Schoolmaster prepared to give Samuel aged six – the equivalent of the cane as punishment for misbehaving. Samuel defiantly warned him “Ah! Friend Mark, it will be of no use, father has used up a whole poplar tree on me, already, but to no purpose.” And it was also a time when the Pacific was viewed with the same sort of immunity, adventurousness, mystery, awe and inherent danger that we now ascribe to the depths of space. Of course, prolific stories about remote islands populated by ‘sickening native girls’ who swam out to meet ships dressed only with a ‘green leaf’ that was ‘generally lost by swimming any length of the way’ only served to fan the flames in many a young man’s mind.

In the end the psychopathology of Samuel Comstock overshadows everything else in the Globe story. Describing this book as ‘a fascinating event in Nantucket’s whaling history’ simply does not do it justice. Heffernan deals with the contributing historical, social, and psychological (or is that psycho-pathological?) factors in such a way that the reader can clearly see the storm clouds gathering. Delusion, frustration and deep-seated aggression are clearly conspiring to drive an already unbalanced Samuel off the rails. And when it does happen, it happens in spectacular fashion - and proves that truth really can be stranger than fiction.

Notice is hereby given that the
ANNUAL GENERAL MEETING
of
THE NAVY LEAGUE OF AUSTRALIA
will be held at the Brassey Hotel, Belmore Gardens, Barton, ACT
On Friday, 15 November 2002 at 8:00 pm

BUSINESS
1. To confirm the Minutes of the Annual General Meeting held in Canberra on 16 November, 2001
2. To receive the report of the Federal Council, and to consider matters arising
3. To receive the financial statements for the year ended 30 June 2002
4. To elect Office Bearers for the 2002-2003 year as follows:  
- Federal President
- Federal Vice-President
- Additional Vice-Presidents (4)

Nominations for these positions are to be lodged with the Honorary Secretary prior to the commencement of the meeting.
5. General Business:
To deal with any matter notified in writing to the Honorary Secretary by 5 November, 2002

ALL MEMBERS ARE WELCOME TO ATTEND
By order of the Federal Council
Ray Corboy, Honorary Federal Secretary, PO Box 309, Mt Waverley VIC 3149
Telephone (03) 9888 1977 Fax (03) 9888 1083
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 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 a defence capability which is knowledge-based with a prime consideration given to intelligence, surveillance and reconnaissance.
- Advocates the acquisition of the most modern armaments and sensors to ensure that the ADF maintains some technological advantages over forces in our general area.
- Believes there must be a significant deterrent element in the Australian Defence Force (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.
- 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.
- Endorses the transfer of responsibility for the coordination of Coastal Surveillance to 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.
- Advocates the development of a defence industry supported by strong research and design organisations capable of constructing all needed types of warships and support vessels and of providing systems and sensor integration with through-life support.

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 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 will lack air defence and have a reduced capability for support of ground forces.
- Advocates the very early acquisition of the new destroyers as foreshadowed in the Defence White Paper 2.
- Advocates the acquisition of long-range precision weapons to increase the present limited power projection, support and deterrent capability of the RAN.
- Advocates the acquisition of the GLOBAL HAWK unmanned surveillance aircraft primarily for offshore surveillance.
- Advocates the acquisition of sufficient Australian-built afloat support ships to support two naval task forces with such ships having design flexibility and commonality of build.
- 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 that in any future submarine construction program all forms of propulsion be examined with a view to selecting the most advantageous operationally.
- Advocates the acquisition of an additional 2 or 3 updated Collins class submarines.
- Supports the maintenance and continuing development of the mine-counter measures force and a modern hydrographic/oceanographic capability.
- Supports the maintenance of an enlarged, flexible patrol boat fleet capable of operating in severe sea states.
- 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 take 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 current economic problems and budgetary constraints, believes that, given leadership by successive governments, Australia can defend itself in the longer term within acceptable financial, economic and manpower parameters.
The guided missile destroyer USS O'KANE (DDG-77) launches an SM-2 standard missile from its forward Vertical Launch System (VLS) during exercise ‘Rim of the Pacific’ (RIMPAC) 2002. The guided missile frigate USS CROMMELIN (FFG-37) (right) and the Spruance-class destroyer USS PAUL F. FOSTER (DD 964) (centre) follow in formation. RIMPAC 2002 is designed to improve tactical proficiency in a wide array of combined operations at sea, while building cooperation and fostering mutual understanding between participating nations. Countries that participated this year were: Australia, Canada, Chile, Peru, Japan, the Republic of Korea and the United States. (USN)
This comprehensive, historically driven booklet contains insights, as well as informative introductions, into the wealth of material found in this groundbreaking DVD.

Franklin D. Roosevelt's address to Congress December 8, 1941.

Pearl Harbor. The Director's Cut Movie.
60 NEW ACTION scenes complete the film as never before. Dolby 5.1 Digital Surround Sound. Widescreen (2.35:1) - enhanced for 16:9 televisions.

3 selectable audio commentaries:
(1) Director Michael Bay and Jeannine Basinger (2) Jerry Bruckheimer, Alec Baldwin, Ben Affleck and Josh Hartnett (3) Cinematographer John Schwartzman, Production Designer Nigel Phelps and Costume Designer Michael Kaplan.

Hours of outstanding special features exploring the historic event and the making of the film. 10 production diaries (1) Airfield Attack (2) Baja Gunship (3) Battleship Row (4) Doomsday Bomb (5) Doolittle Raid (6) Sandbag Stunt (7) Fire Island (8) Mechanics Row (9) Doolittle Raid (10) Arizona Dive

Exhaustively detailed interactive timeline documentary tracing the culture clashes and political struggles which gave rise to the Japanese attack.

Super 8mm montage by creative advisor Mark Palansky.

History recollection interview with Nurse Ruth Erckson.

Faith Hill music video "One Hour Over Tokyo History Channel documentary.

Multi-angle multi audio interactive attack sequence - look in incredible detail at the creation and production of the film's most exciting sequence from 4-camera and 6 audio angles.

Deconstruction/Reconstruction: a conversation about visual effects with Michael Bay and Eric Brevig.

'Animatic Attack' scene concepts from Michael Bay.

Boot Camp: segments of the actor's preparation.

Still Galleries: never-before-seen photos from the set.

★ 3 disc DVD ★ Over 12 hours ★ 60 new action scenes of outstanding special features

Also Available

The 6 hottest Jerry Bruckheimer action titles in a special collectible packaged box set. Limited release. Available only while stocks last.

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PLEASE NOTE

THIS MATERIAL WAS FILMED AT A REDUCTION RATIO OF 23.5x

SOME PAGES MAY CONTAIN POOR PRINT, TIGHT BINDING, FLAWS AND OTHER DEFECTS WHICH APPEAR ON THE FILM