The RAN Today and Tomorrow

Vale Stalwart

Battle of the River Plate

MPA’s take off

Why the ADF needs Surface Combatants
South Africa's new Meko A200 corvette at sea and on her way to South Africa to be fitted out before her expected commissioning in August 2004. The new stealth ship is one of three which will be armed with eight MM-40 Block II Exocet anti-ship missiles, an indigenous VLS with 16 cells for the South African Umkhonto anti-air missile, a 76mm super raid gun, torpedoes, a 35mm gun and a Super Lynx helicopter. (Blohm+Voss)

The RAN's first provisionally accepted Kaman SH-2G (A) Super Seasprite about to land on an RAN ship for the first time. HMAS WARRAMUNGA will be the test ship for the first of class flight trials for the new helicopter. (RAN)
THE NAVY

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Contents

THE RAN TODAY AND TOMORROW
By Ian Johnson & Tom Crown Page 3

MPA'S TAKE OFF
By George Kaplan Page 9

BATTLE OF THE RIVER PLATE
By Syd Goodman and Dennis Andrews Page 13

VALE STALWART
By John Jeremy Page 26

WHY THE ADF NEEDS SURFACE COMBATANTS Page 28

Regular Features

From the Crow's Nest Page 2
Flash Traffic Page 17
Observations Page 25
Hatch, Match and Dispatch Page 31
Product Review Page 32
League Policy Statement Page 34

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Front cover: An Evolved Sea Sparrow Missile (ESSM) leaves the Mk-41 Vertical Launch System (VLS) of the RAN Anzac class frigate HMAS WARRAMUNGA. See news section 'Flash Traffic' for more details. (RAN)

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THE EXAMINERS HAND IN THEIR REPORTS

Three of four significant inquiries concerning security and economic policies ended in the second half of 2003, the reports receiving varying degrees of public attention; in order of publication they were:

• The Defence Procurement Review 2003 – better known as the Kinnaird Review, named after the chairman of the reviewing team. Submitted in August.
• The Defence Capability Review. Decisions announced in November.

The findings and recommendations of the fourth enquiry, that of the Defence Sub-committee of Parliament’s Joint Standing Committee on Foreign Affairs, Defence & Trade into Australia’s maritime strategy, was not available in mid-November when this article was compiled; this might be thought surprising as the policy has been a major factor in defence capability for many years.

The Kinnaird Review, commissioned by the Government in late 2002 to examine defence procurement arrangements, not only criticised existing acquisition arrangements but also queried the adequacy of advice given to the Government concerning capability assessments and requirements. The recommendations of the Review, “largely accepted” by the Government would seem to have an important bearing on the realisation of the acquisition objectives of the Government contained in the capability review. (Further comments on the Kinnaird Review may be found in “Observations”).

The Independent Review of Australian Shipping (IRAS) was commissioned by the Australian Shipowners Association about 12 months ago and carried out by Messrs. Peter Morris and John Sharp, former Transport Ministers in Labor and Coalition ministries respectively: Their report stressed the need for the industry to be independent of “Government largesse” but at the same time pointed out the need for Government support, not least in the form of relief from repressive laws and regulations.

Defence Capability Review: The latest review fulfils the Government’s intention to review annually the capability proposals contained in the defence policy White Paper Defence 2000: In that document the Government recognised the importance of long-term planning if ever the Australian Defence Force was to attain the desired level of capability. It is to the Government’s credit that despite all manner of distinctions, in two annual reviews it has confirmed the basic capability plans outlined in Defence 2000.

So far as the Navy is concerned its people have reason to be pleased. There are no major ‘casualties’ in equipment planning and the announced intention to retire two FFGs “from 2006” is reasonable when it is considered the first two FFG’s, ADELAIDE and CANBERRA, were launched (in Seattle USA) in 1978 and have been worked hard by the RAN. Two of the six coastal mine hunters will also be laid up, presumably as part of the plan to overcome personnel shortages.

The Government has said it would prefer the planned three air warfare destroyers and two amphibious ships to be built in Australia rather than purchased overseas. While the dimensions of the new ships is unknown (or have not been published) the equipment to be fitted to the destroyers and the purpose of the amphibious ships indicates fairly large vessels; this may cause some problems as Australia has not built large ships for many years and building yards would almost certainly need extensions, e.g. slipways. Also, some of the Kinnaird recommendations could be applied and options such as off the shelf acquisition considered. These are not insuperable problems and it would undoubtedly be in the country’s long-term interests to maintain the shipbuilding industry.

Geoffrey Evans
The Royal Australian Navy of 2003 is experiencing a very high ‘tempo of operations’ rate. It has been part of an international naval task force during Operation Falconer against Iraq. It is operating independently during Operation Anode in the Solomon Islands and maintaining its Operation Relex duties intercepting illegal smuggling vessels. This effort is quickly wearing out ships and crews far quicker than envisaged. Ian Johnson and Tom Crown take a look at the plans the RAN had for its future and ask if this is still the case given the recent DCR (Defence Capability Review).

The RAN has changed considerably in the past twenty-five years. In 1978 nearly all RAN ships were based on the east coast and the aircraft carrier HMAS MELBOURNE was the fleet flagship. The Perth and Daring class destroyers and the River class destroyer escorts formed the backbone of the RAN. However, by 1983 all that had changed. There was no carrier to replace MELBOURNE, the Daring class were decommissioning and new ships and weapons were coming into the fleet with differing manpower requirements. The fleet was slated to become a ‘Two Ocean Navy’ with HMAS STUART (DE-48) to be the first to have HMAS STIRLING in Western Australia as her homeport.

In 2003 the ‘Two Ocean Navy’ is reality with half the surface fleet and the Collins class submarines home ported at HMAS STIRLING. New ships and weapons, as well as new doctrine on all aspects of naval power are allowing the RAN to continue to enjoy world seapower status. Like 1983, the RAN is moving forward.

In the document ‘Australia’s Navy for the 21st century’, more widely known as Plan Blue, long range planning for Navy’s future was articulated with a view of the future extending through to 2030. While such planning helps with future manning levels and budget requests, the reality is that the defence dollar will shrink and that new threats to the nation are unpredictable and could change the way Australia is defended. These events could wreck Plan Blue.

The following is a snapshot of the RAN today, its plans for the future taken from Plan Blue and how the DCR has affected the RAN. However, it should be stressed that Plan Blue was written before the higher than expected Tempo of Operations and before the DCR.

COLLINS

With the move from Sydney to HMAS STIRLING in 1999 by the Submarine Force Element Group (FEG), a new era began for the RAN’s submarine service. With the introduction of the Collins class submarines being behind schedule and over budget, public criticism grew, while many also questioned the move to have women serve on these submarines. As the new submarines were coming into the fleet, all was not well; the RAN admitted that the Collins class were not up to scratch. A number of problems were identified by an inquiry, which by 2000 were being worked on.

By March 2003 all six Collins class submarines were commissioned, with COLLINS, DECHAINEUX, SHEEAN and RANKIN having the ‘Fast Track’ upgrades recommended by the ‘Briggs inquiry’. Another problem for the submarines was and still is the public’s perception, due mostly to incorrect and sensationalist reporting by the media. In fact the ‘Fast Track’ improvements to four of the submarines have made the class a formidable force, with USN submarine Captains stating that during exercises the Collins class submarines are tough to impossible to beat. The class has also chalked up a few USN aircraft carriers by beating layers of ASW defence screens in the form of other submarines, aircraft and escorts.

The biggest problem currently facing the submarine service is having enough people to man all six submarines. Even with women serving on submarines the RAN does not have enough to man all with the issue causing morale problems. Also of concern are the continuing faults of the
Collins class such as faulty valves, which must have an unsettling affect on those who man these submarines.

With the commissioning of HMAS RANKIN in March last year, the first phase of the COLLINS class project comes to a close, with the next phase of refits and upgrades designed to keep the submarines in service for the next twenty to thirty years. However, the submarine fleet is not expected to be fully operational until 2006, when all submarines would have been through the ‘Fast Track’ process, with faults corrected and a new fire control system installed.

FUTURE PLANS

While construction of the Collins class has ended the RAN should begin long term planning for their replacements. Although the submarines are not due to start decommissioning till 2026, the RAN could begin to plan a replacement class in order to ensure the mistakes of the Collins program never happen again. The skills of the Submarine Corporation workforce that have been developed over the course of the past 14 years of this project must not be lost given the time and money that has been spent on the Collins class.

DESTROYERS

With the decommissioning of the last DDG, HMAS BRISBANE in 2002, the RAN lost a command and control platform as well as a major anti-air and naval gunfire support ship. The failure to acquire the four ex-USN Kidd class destroyers as replacements for the DDGs (and to a lesser extent the first two FFGs) has left a gap in the RAN’s capabilities. That gap is to be filled by the Adelaide and Anzac class frigates through upgrades to their defensive suites, as a replacement anti-warfare destroyer capability is not expected to be in service before 2013.

FUTURE PLANS

While no replacement program on a ‘one for one’ basis existed for the DDGs, Project SEA 4000 is understood to provide a new air warfare destroyer capability for the RAN. A call for tenders is expected soon for three new ships however, with the RAN needing to replace its amphibious fleet sooner rather than later it is unknown when the air-warfare destroyer might come into service given this competing demand. A number of sources within Navy have suggested that a plan was being considered for inclusion in the DCR to alleviate this pressure. The plan called for the acquisition of three of the USN’s first five Ticonderoga class cruisers, which are due to start decommissioning next year. These ships, while representing a significant capability boost, would have provided the RAN with a useful transition platform to the new air-warfare class of destroyer given the similar technology and weapons. It would also have had the effect of allowing for a delay in SEA 4000’s delivery date and thus freeing up funds for the replenishment and amphibious replacement programs. It is said that the USN was approached about the possibility of acquiring some of the first five Ticonderoga’s and that they agreed to supply them if the RAN asked.

The recent DCR reiterated the RAN’s plans for three new build air-warfare destroyers, announced in the Defence White Paper of 2000, built in Australia and with a US Aegis combat system. The fascinating part of this announcement wasn’t the ships or the combat system but the mass media’s belief and portrayal of the announcement as something new. Defence’s spin doctors seem to be worthy of their title, again.

FRIGATES

FFGs

The RAN’s six Adelaide class frigates (USN Oliver Hazard Perry class) were originally designed for the USN as cheap and expendable surface ships for use as convoy escorts if the ‘Cold War’ became ‘hot’. They were designed for both anti-air and anti-submarine warfare and are armed with Standard SM-1 Surface to Air Missiles, Harpoon Anti-Ship Missiles, a 76mm gun, two sets of triple torpedo tubes for Mk-46 ASW torpedoes, a Mk-15 Block 1 Phalanx CIWS (Close In Weapon System) and two S-70B2 Seahawk helicopters for over the horizon targeting and ASW tasks. The current problem for the RAN is the fatigue and useful life of the first four frigates (ADELAIDE, CANBERRA, SYDNEY and DARWIN). The last two (MELBOURNE and NEWCASTLE) were built in Australia with a much stronger steel thus giving...
them far more useful life in the hull than their US built counterparts. Due to a number of advances in anti-ship missile technology and shortages of SM-1 four of the six frigates are earmarked for an upgrade program to not only extend their life but enhance their capabilities to deal with future threats. However, this upgrade program is currently running two years behind schedule with HMAS SYDNEY only recently entering dry dock to undergo the upgrade. Plans for upgrading ADELAIDE and CANBERRA are thought to have been shelved given their early retirement in approx 2006 as announced in the DCR.

**FUTURE PLANS**

The FFG Upgrade will be the last major upgrade of the FFG’s life. Recent plans announced in the DCR state that the SM-2 anti-air missile will be used to replace the SM-1 in the four upgraded FFGs. Potential problems with SM-1s reliability and war stocks supply have been articulated by some in Navy for some time. While upgrades to the SM-1 have been offered by Raytheon, the question of supply cannot be resolved as the production line for SM-1 ended in the 1980s.

An SM-2 from and RAN FFG however, cannot be used to its full extent. The missile requires a 3-Dimensional air search radar and data link from the launch platform in order to realise its extended range of approx 80km. Updates from the 3-D radar allow the missile to intercept its target by adopting a predictive flight path, given the three inputs from the 3-D radar. Illumination is then only required in the last few seconds of the engagement giving the target virtually no warning or time to use countermeasures. Without these two system inputs, an RAN FFG will need to illuminate the target for the entire engagement, meaning the missile will have to ‘chase’ it and thus use up most of its range enhancement over the SM-1. Current estimates from the maker suggest that an increase in range of only 10-15kms will be achieved by an FFG launched SM-2 over an SM-1. So it must be stressed that the real reasons and benefits for the SM-2 purchase is failing reliability and supply of SM-1 only.

The FFGs will also be fitted with an 8-cell Mk-41 VLS (Vertical Launch System) for 32 ESSMs (Evolved Sea Sparrow Missiles) to better enable anti-ship missile defence and form another anti-air layer to the ship’s SM-2 missile. A number of other improvements to habitability, helicopter handling and surveillance should see the ships through to their decommissioning date.

**ANZACS**

The introduction into service of the RAN’s first five Anzac class frigates (ANZAC, ARUNTA, WARRAMUNGA, STUART and PARRAMATTA) has been on time and on budget. These are the first RAN ships to be equipped with the Mk-41 VLS for the ESSM. They also carry a 127mm (5-inch) gun, two triple Mk-32 torpedo tubes for Mk-46 ASW torpedoes, four .50-cal machine guns and a Seahawk/Super Seasprite helicopter, with the Seasprite having the IR guided AGM-119 Penguin anti-ship missile. They are also fitted with the Australian designed Nulka hovering rocket which employs an electronic warfare payload to seduce ASMs away from the ship.

While the class are understood by many to be ‘fitted for but not with’, the reality is that ‘space and weight’ have been provided for only.

The three remaining ships, BALLARAT, TOOWOOMBA and PERTH, are expected to be in service by 2006, with the eight ships of the class becoming the mainstay of the fleet.

**FUTURE PLANS**

The Anzac class are about to undergo a warfighting improvement program. This program will entail the fitting of a second fire control channel to guide the ESSM, Harpoon ASMs, a torpedo defence system and a second type of anti-air missile, thought to be the French made Mistral II for ASM defence and as a second anti-aircraft defensive layer. They will not be fitted with the Phalanx CIWS as current thinking dictates that the ESSM and the second anti-air missile will be enough to defend the ships from modern ASMs.

**PATROL BOATS**

The Fremantle class patrol boats are approaching the end of their useful and economic service life. The Fremantle class are armed with a 40mm Bofors gun and two .50-cal machine-guns. The Fremantle’s have proven to be valuable
and reliable units for the RAN. Most of the class are based in the North in an effort to stop illegal fishing and people smuggling with many of the patrol boats spending up to 7-8 months at sea.

FUTURE PLANS

The replacements for the Fremantles, known as the Armidale class, will be built in Australia by Austal Ships based in Western Australia. These patrol boats will be the front line of the RAN in Northern Australia as they continue the outstanding work of the Fremantle class.

The new aluminium boats will operate out of Cairns and Darwin and will be armed with an Israeli Rafael 25mm Typhoon stabilised automatic cannon and equipped with state-of-the-art communications systems. They will be able to operate in a greater range of sea conditions and will improve Navy’s capability to intercept and apprehend vessels suspected of illegal fisheries, quarantine, customs or immigration offences.

The fleet of 12 new patrol boats will also carry two smaller sea boats to allow crews to conduct boarding and surveillance missions with greater flexibility, reliability and security.

Navy will be able to operate the new Armidale class boats for a combined total of 3,000 days per year, plus have the capacity of an additional 600 days for short notice tasks. This compares to an average 2,700 operational days per year currently undertaken by the existing Fremantle boats.

The boats will have a range of 3,000 nautical miles, a 25 percent increase over the Fremantles. Being some 14.8m longer than the Fremantles, and fitted with an active ride control system including fin stabilisers and trim tabs, the new patrol boats will be able to operate in a greater range of sea conditions, further improving their use at sea. They will have a capacity to carry up to 20 extra people in additional accommodation, whereas the Fremantles have no dedicated additional accommodation.

However, it should be stressed that like the Fremantles, the Armidale’s warfighting role is limited at best.

MINE HUNTERS

The Huon class minehunter program that has delivered six new minehunters to the RAN has been trouble free, on time and on budget. Based on an Italian design the six ships of the class are among the best in the world. Fitted with the most advanced minehunting equipment the Huon class are a major asset to the RAN and will be for some time to come.

However, there are two questions surrounding the minehunter capability. Does the RAN have enough of these ships, and should at least two of the Huon class be based in the West. The answer is probably no, and to the second, yes. In the age of Asymmetric warfare, harbours such as Wepia, Port Hedland, and Dampier are attractive targets for those who have the capability and experience to lay mines. If just one port were targeted it may take every mine-hunting ship and clearance diving team in the RAN to both sanitise and to check the approaches to the affected port. If Port Hedland or Dampier were affected it will take weeks for a minehunter to arrive on site from Sydney, where a HMAS STIRLING based ship can be in position inside of three days.

The Minehunters can also provide an effective ‘backup’ for the patrol boats as seen in the current operation in the Solomon’s with HMAS HUON conducting very successful patrol and SAR (Search And Rescue) duties.

The recent DCR actually announced the laying-up of two unnamed Huon class minehunters as a cost and personnel saving measure.

AMPHIBIOUS WARFARE SHIPS

The nine ships of the RAN’s amphibious squadron are busier now than over the past 30 years. The heavy landing ship HMAS TOBRUK is nearing the end of her service life. A reliable ship, TOBRUK is the heavy lift backbone of the amphibious squadron and without an appropriate replacement the Army’s ability to deploy vehicles and armour over the beach will be limited.

The two LPA’s, KANIMBLA and MANOORA, have been used extensively since mid 2000. The question as to whether these two ships were worth the wait and the negative media coverage has been answered with a resounding yes. From the Pacific to the Persian Gulf, these modified Newport class tank landing ships have been hailed as vital assets for their load carrying capacity, aviation support facilities, hospital and their considerable Command, Control and Communications facilities, something the RAN has been lacking since the decommissioning of HMAS MELBOURNE (R-21) in 1982. Both ships are to get new landing craft (to be built by ADI Newcastle).
While there has been much discussion on the replacements for TOBRUK, KANIMBLA and MANOORA with a common hull type, plans announced in the capability review go some way to providing direction for the RAN. TOBRUK is now to be replaced in 2010 with a “much larger amphibious ship”. The two LPAs will also be replaced by a “much larger amphibious ship” and a sealift ship. Whether the two “much larger amphibious ships” will be a common hull is unknown as is their size and capability, although it is known that Army wants the capability to deploy a Battalion sized combined arms group made up of infantry, armour (with Army to get a new heavyweight tank), artillery and aviation support.

The replacements for the Balikpapan class are being examined under Joint Project 2048 ‘Amphibious Watercraft Program’, with several concepts, from monohull to catamaran being considered to replace these workhorses.

**SURVEY VESSELS**

The RAN’s fleet of survey ships is relatively new, with the oldest ship less than 10 years old. The survey ships are based in Cairns and use the most advanced hydrographic tools available. They had some success recently with charting a new course through the Great Barrier Reef for large ships. This should save shipping companies millions of dollars, which should hopefully be passed onto the consumer. However, the two largest ships, LEEUWIN and MELVILLE, recently swapped their usual all over white colour for RAN grey in order to take up some of the strain of Operation Relex duties. Relex is the operation to patrol and intercept Suspected Illegal Entry Vessels known as SIEVs. The fact that these ships have been turned into warships and pressed into operational service is an indication of how the Federal Government’s policy towards People Smuggling is wearing out the Navy.

**REPLENISHMENT SHIPS**

The RAN currently has two replenishment ships, HMAS SUCCESS, which is 16 years old, and HMAS WESTRALIA, which is over 40 years old. Both ships need to be replaced.

New international laws pertaining to oil and fuel carrying ships, such as the RAN’s two replenishment ships, will mean that neither ship will be compliant. The new laws, ratified by Australia, call for all fuel/oil carrying ships to have a double hull to contain oil spills in case of collision or grounding.

**FUTURE PLANS**

The recent DCR announced the decommissioning of WESTRALIA and replacement by 2006. Her replacement is understood to be a standard double hulled bulk oil merchant ship refitted and modified for use as an at sea replenishment vessel. SUCCESS can be modified for a modest price to make her compliant with the new laws but nothing has been heard on this subject as yet.

**FLEET AIR ARM**

The RAN Fleet Air Arm (FAA) has had a rebirth after the scrapping of the fixed wing elements in 1983. The MK-50A Sea King and S-70 Seahawk helicopters currently form the backbone of the FAA and are being used extensively from the Persian Gulf to the Solomon’s.
Problems continue with the SH-2G(A) Super Seasprite which has delayed their introduction into service. At present the Seasprites are not expected into service until 2005, at least three years behind schedule. Although, the first Seasprite has recently been provisionally accepted into service and started shipboard trials aboard HMAS WARRAMUNGA.

The other helicopter type used by the RAN is the French built Squirrel. Its roles consist of pilot training, SAR and general utility transport.

The ADF is currently undergoing a study to try and reduce the number of different types of helicopters it uses. The plan calls for reducing the number of airframe types from the current figure of eight (soon to be nine with the Army’s Tiger attack helicopter) to around three to four. It is hoped that the Seasprite, Seahawk and Sea King can be replaced with a common airframe which will also be common to the Army’s Iroquois and Black Hawk replacement. AIR 9000 is expected to report within the next 12 months however, in the interim a fleet of 12 new marinised helicopters are to be acquired for the Army for operations from KANIMBLA and MANOORA. They should also form part of the early replacement for the Sea King and may even replace many of the helicopters listed above in later phases. Thus, it is vital that this next purchase is done correctly with the right airframe chosen, despite the fact that it will then give the ADF 10 helicopter types for a short period.

CONCLUSION

The war on terror, as well as the mission to the Solomon Islands and Operation Relex, has increased the operation tempo of the RAN. This has both good and bad points. One of the good points is that the tempo of operations is giving much needed experience to younger sailors of what can be expected in the future. The bad point is that supplementation funding for this increased tempo has not been forthcoming thus having a detrimental effect on replacement programs. Ships are also being worked harder than budgeted for with maintenance schedules and refits suffering.

Despite Navy’s efforts in drafting Plan Blue the DCR has changed some aspects. Meaning Navy will have to go back to the drawing board and re-do Plan Blue.
Year in and year out, NATO Orion’s, Nimrods, Neptune’s, Atlantique’s and carrier borne Viking’s swept the cold waters of the North Atlantic or the warmer waters of the Mediterranean, keeping tabs on Soviet and Warsaw Pact warships. They spent long and often fruitless hours searching for lurking conventional and nuclear powered submarines, which, in wartime, would menace the maritime life lines between the old and new worlds. In turn, the May’s, Bear’s and Mail’s of the Soviet Union mirrored the role of their NATO adversaries.

This pattern was repeated around the world, in the Sea of Japan, the Indian Ocean, the deep waters of the Pacific and across the world’s oceans.

With the fall of the Berlin Wall, many observers expected the day of the MPA to pass. With the Soviet submarine fleet descending into decrepitude and rusting apart in harbour for want of funds to maintain them, it was felt that the West would no longer need the specialist skills that the MPA provided.

In fact, the New World Order following the Cold War has seen an ever-increasing demand for the varied capabilities and vast endurance of Maritime Patrol Aircraft.

Operations in support of United Nations sanctions and missions over the Balkans, Rwanda, the Persian Gulf, Afghanistan and Iraq have seen the west’s MPA’s take on new and increasingly critical roles, while still calling on their well-proven capabilities to provide surveillance over the maritime environment.

In Afghanistan, MPA’s were called upon to act as communication nodes for Allied forces in that country’s difficult terrain, a role reprised in Operation Iraqi Freedom where their ability to operate for 8 to 12 hours without requiring air to air refuelling was highly prized.

THE PRESENT

The main problem for future operations is the growing age of the base platforms, which, having operated in the harsh maritime environment for so long, are becoming more and more susceptible to corrosion and fatigue life limits. While upgrade and refurbishment programs have been undertaken by many operators, they cannot escape the fact that the majority of the designs are now some 30+ years old, and a replacement is needed within the decade.

A short look at current MPA’s will highlight the problems facing their operators and some of the possible replacements that may one day take their place.

ORION THE HUNTER

The most popular and prolific of the MPA’s is the Lockheed P-3 Orion. Ordered in 1960 to replace the Neptune, the Orion was based on Lockheed’s Electra four turboprop-engined passenger aircraft, suitably modified to incorporate an array of sensors and a weapons bay for a wide range of stores, including mines, torpedoes and depth bombs, including the 10/20 kiloton B57 nuclear weapon.
Since the original P-3A took flight in 1961 and continuing through the P-3B and P-3C models, the design has been operated by a dozen nations, with Australia, Norway and New Zealand early operators. Licence production of 110 aircraft was also undertaken in Japan for the Japanese Air Self Defence Force, while a generally similar aircraft was operated by Canada as the CP-140 Aurora.

The last new build unit, a P-3C model, was delivered to South Korea in 1995, however most of the types’ operators have undertaken a series of update and upgrade programs to keep the Orion flying. For example the Royal New Zealand Air Force undertook a re-winging of their small fleet of six P-3K aircraft to ensure their continued operation. The Royal Australian Air Force has undertaken a major upgrade of the electronics of their Orion fleet, resulting in the new designation AP-3C.

With the fleet of US Navy Orions’ declining, several countries have acquired surplus aircraft, with India reportedly interested in acquiring a number of aircraft to replace its aging IL-38 May aircraft. This would result in the Orion operating on opposing sides of the continuing India – Pakistan tensions.

The Nimrod, solely operated by the Royal Air Force, began life as a derivative of the De Havilland Comet, the first jet powered airliner. Development began in 1964 with the newly christened Nimrod entering service in 1969. The Nimrod was a derivative of the Comet, incorporating an enlarged fuselage to support the electronics fit and weapons stores bay. The Nimrod has four jet engines, with two engines usually shut down when on patrol, being brought back on line for transits and for when higher speeds are required. Over the years the Nimrod has been upgraded numerous times, the most recent of which is still being undertaken by British Aerospace, in a project suffering massive cost overruns.

**ATLANTIQUE – EUROPEAN OCEAN HUNTER**

The original Atlantique entered service in 1965 with the French Navy, with other operators including West Germany, the Netherlands, Italy and Pakistan. A new design not based on an airliner, the Atlantique I is somewhat smaller than both the Nimrod and Orion, and differs in having only two rather than four engines. In 1989 a new and upgraded derivative of the Atlantique, the imaginatively named Atlantique 2, entered service with the French Navy, replacing the older aircraft. The new aircraft incorporates a new auxiliary power unit and new electronics, many of which were first incorporated in the Atlantique I.

**THE OCEAN RAIDING VIKING**

The Lockheed S-3 Viking was a carrier borne anti-submarine and maritime patrol aircraft designed to package much of the Orion’s electronics and capabilities into an aircraft capable of operating from the US Navy’s aircraft carriers. First flight of the twinjet powered Viking took place in 1972, with the Viking entering service in 1974.

Over the next quarter century numerous upgrades to electronics and other equipment were undertaken, as well as the conversion of some aircraft to electronic warfare roles, however the decision was taken in 1998 to phase out the Viking in the MPA/anti-submarine/EW roles.

**FROM COMET TO NIMROD AND BEYOND**

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Some of the remaining aircraft were refitted to land-attack and tanker roles. More recently there has been suggestions made that the stored S-3 fleet may be converted to water dropping fire bombers if no foreign buyer shows interest in acquiring the Viking.

THE MARITIME MAY

The Ilyushin IL-38 (NATO reporting name May) was, like its counterpart the Orion, derived from a turboprop powered commercial airliner, the Il-18. Entering service in 1968, the May served with the Soviet (now Russian) Navy, the Ukraine and India. It has followed a similar path to the Orion, Nimrod and Atlantique, incorporating a range of electronics upgrades to adapt to the revolution in computing power and changing operational circumstances. In addition, like its counterparts it has spawned a series of electronic warfare derivatives as well. A continuing upgrade program, project Sea Serpent continues today.

THE RUSSIAN BEAR

The Tupolev Tu-95 Bear reversed the more usual progression from civilian airliner to military derivative; the Tu-95 preceded the civilian Tu-114 by several years, entering service in 1956. Given the NATO code name Bear, this massive aircraft incorporated a series of contradictions; it was powered by four massive contra-rotating turboprop engines, but incorporated swept wings, despite conventional science stating that swept wings only become effective at speeds unattainable by propeller driven aircraft. Despite this the Bear has proven a particularly effective aircraft, with derivatives operating as bombers, electronic warfare aircraft, airborne command posts and cruise missile carriers.

The maritime patrol variant, designated Tu-142, is operated by both Russia and India, with the Russian Navy upgrading the Bears electronics and armament under a project dubbed Sea Dragon.

THE MULTI-MISSION MARITIME AIRCRAFT

The majority of the popular maritime patrol aircraft we have examined initially entered service in the 1960s or early 1970s, the exception being the Atlantique 2 which in now some 15 years old. While all have had numerous electronic and structural upgrades to allow them to continue into service, none are still in production, and each aircraft lost to mishap or fatigue results in the permanent reduction of the available fleet.

While some Russian and European paper plans exist for replacement aircraft the only serious options currently being offered are by the US manufacturers.

Two manufacturers are vying to fill the United States Navy’s Multi-mission Maritime Aircraft requirement for a P-3 replacement. Due to the size of the USN requirement, the winner of this competition will automatically be catapulted into the position of favourite for other Orion replacement programs worldwide.

Lockheed Martin, who can lay claim to the most successful MPA aircraft of the last four decades, the P-3 Orion, have proposed opening a new production line for their MMA contender, the Orion 21, incorporating the latest technologies in materials, power plants, electronics and production methods. The proposed new aircraft bears a striking resemblance to today’s P-3C, the most notable difference being the six bladed propellers of the new aircraft’s turboprop engines, the same engines fitted to Lockheed Martin’s new C-130J Hercules.

Despite a close resemblance to the original Orion, Lockheed Martin are emphatic that their proposal is a combination of cutting edge technology, mated with a tried and tested design, one which will utilise the latest of today’s construction materials and techniques to offer unparalleled improvements in reliability, sustainability and capability over the Orion it would replace.

Lockheed Martin emphasises that it is building on the strength of 40 years of MPA experience, and that the Orion is the standard maritime patrol aircraft for the western world, with hundreds still in service, and its proven expertise makes it the logical source for an Orion replacement.

Perhaps the main weakness in Lockheed Martin’s proposal is that the Orion 21 indeed looks so similar to the Orion that it is intended to replace, leading to its opponent suggesting that it is offering a warmed over Orion to meet a new centuries challenges, a claim Lockheed Martin strenuously deny.

The alternative to the Orion 21 comes from a name not previously associated with maritime patrol aircraft, Boeing. Better known for the thousands of its airliners in service across the globe, and for the range of McDonnell Douglas fighter aircraft it now produces under its name following the acquisition of that company, Boeing has thrown its hat into the ring with a design based on its best selling 737 airliner.

The Boeing MMA is based on the 737-800 passenger aircraft. The original 737-100 aircraft flew in 1967, and was followed by the similar 737-200. In 1981, Boeing announced that it was developing a larger and more advanced version of the original 737 family, which would incorporate new engines and avionics amongst other improvements. The resulting aircraft, the 737-300 and its derivatives, the larger 737-400 and smaller 737-500 went on to serve in airlines around the world, with some 2000 examples sold.

Building on that success, Boeing launched the 737 New Generation series, the smaller 737-600, mid-sized 737-700
and the larger 737-800 and 737-900. These aircraft incorporated substantial improvements in aerodynamics, engines and avionics, resulting in substantial improvements over the older “Classic” series of 737 aircraft, leading to sales of more than 1200 aircraft, with the production line still in operation.

Boeing is hoping to build on this legacy of reliability and worldwide network of operators and maintenance expertise by adapting the 737-800 to a new role as a Maritime Patrol Aircraft.

Boeing claims a long and successful track record of modifying commercial aircraft for military use, with the 707, 737, 747 and 767 all having been modified into a range of roles including Airborne Early Warning, air to air refuelling tanker, airborne command post, ground surveillance, electronic warfare aircraft and VIP transport amongst others.

Critics of the Boeing proposal point out that the company has never had to fit a weapon stations to the wings and a bomb bay to the fuselage of an airliner before, nor operate a modified airliner in the harsh environment of low-level flight in the salt laden air of the world’s oceans.

Boeing responds that it has extensive experience in the maritime environment, through its F/A-18 Hornet program for the United States Navy, and that the Orion began life as an airliner as well.

In addition, Boeing points out that the 737-800 derivative enjoys a 100-knot speed advantage and a 3.5 kilometre altitude advantage over the P-3 that it would be replacing.

Boeing further points out that the USN’s Orion fleet is spending less and less time at low level hunting submarines, and more at higher altitude, monitoring shipping for illegal activity, and over land in support of operation in areas such as Bosnia, Afghanistan and Iraq, a pattern likely to continue.

The two manufacturers continue to argue the merits of their competing designs, each stressing their strengths and deriding their opponent’s weaknesses, in a competition that will determine the future of manned maritime patrol aircraft for decades to come.

One thing that everyone agrees on is that the USN is not going to be replacing the P3 fleet with either of the contenders in anything like equal numbers, with a figure of perhaps 150 aircraft being required.

The reason for this change is that a new contender is emerging from the labs to stake a claim as the new future of maritime patrol, Unmanned Aerial Vehicles, or UAVs.

THE FUTURE IS ROBOTIC?

UAVs, with their capability for remote operation, well beyond the normal limits of aircrew, offer the military the potential to maintain constant, 24 hour surveillance of an area, perhaps thousands of miles from the nearest base, with far fewer assets (UAVs) needed than would be required if carried out with, for example, P-3C Orion’s.

The largest and perhaps best known of the UAV’s currently under development is the Northrop Grumman Global Hawk. This large UAV, almost as large as a small airliner, is capable of some 14,000 miles range, and boasts an endurance of 42 hours aloft.

It has demonstrated its capabilities by deploying from the United States to Australia non-stop across the North and South Pacific Oceans, the first unmanned aircraft to do so, and has been deployed on combat operations over Afghanistan and Iraq.

A Northrop Grumman RQ-4 Global Hawk Unmanned Aerial Vehicle (UAV). This high endurance UAV could be the future for wide area surveillance tasks previously done by the manned MPA. (USAF)

Plans are afoot to fit the Global Hawk with a range of maritime sensors as part of the USN’s Broad Area Maritime Surveillance project (BAMS), allowing vast areas of the world’s oceans to be scanned with the results immediately available via satellite data link from the Global Hawk to the control station, which could be located anywhere on earth.

Another UAV manufacturer, General Atomics is proposing a version of the combat proven Predator UAV for the BAMS role. Whilst smaller and less capable as a platform than the Global Hawk, the Predator is substantially less expensive, allowing more aircraft to be acquired with available funds.

Such are the benefits that a UAV offers, that a manufacturer of piloted aircraft has proposed converting one of their aircraft to a UAV for the surveillance role. Grumman Aerospace is offering a version of their Gulfstream business jet, modified for pilot-less operation, to compete against the Global Hawk for the BAMS competition.

CONCLUSION

Whilst the range of roles carried out by the MPA has grown over the years, as has the number of nations operating these large and versatile aircraft, the number of possible replacements has dwindled to only two serious contenders, with whomever wins the MMA competition seemingly assured of the lions share of the future MPA market for decades to come.

Looking beyond the results of this current competition, it is possible to see the eventual replacement of manned maritime patrol aircraft with large, very long range UAVs, at least for the surveillance role. Their ability to remain on station for very long periods of time at extended ranges from operating bases, free of the constraints of aircrew endurance, offers a capability that few nations with a requirement for maritime surveillance can afford to pass up.
The German pocket battleship Admiral GRAF SPEE had sailed from Wilhelmshaven on August 23 1939, as Europe teetered on the brink of war. When war broke out in early September she was therefore already on station to attack cargo laden ships, on the commerce routes to the United Kingdom and Europe. GRAF SPEE became a serious problem for the Royal Navy, as she roamed the seas wreaking destruction on solitary, unprotected merchant ships, tying up a number of RN ships in the desperate hunt for her.

Captain Hans Langsdorff, GRAF SPEE’s Commanding Officer, was determined to remain elusive, for he had been ordered to avoid any action involving enemy naval forces. He sank his first victim off the Brazilian coast and then crossed the South Atlantic to prey on the shipping lanes off West Africa, where he sank four more ships, then briefly deploying into the Indian Ocean. Two more ships fell victim to the Kriegsmarine predator before the wireless operator of the sinking DORIC STAR managed to send off a signal reporting GRAF SPEE’s position. This was the first time in three weeks that the pocket battleship’s position had become known. The day after the sinking of DORIC STAR, the merchant ship TIAORA was stopped by a large warship flying a dirty, French ensign. It was GRAF SPEE, employing one of her many ruses to lull her victims into a false sense of security. The object of this was to get as close as possible, without alarming the merchant ship, and thus prevent the use of the ship’s radio to give away the German warship’s position. Bravely, despite Langsdorff’s clear warning – “Do not use your wireless or you will be fired upon!” – TIAORA transmitted warning signals, which were received and relayed to the Royal Navy squadron hunting for the raider.

GRAF SPEE had been at sea now for nearly four months, supplied by a string of support ships including the infamous ALTMARK, and had sunk nine ships. However, many of the raider’s support ships were being hauled into the Royal Navy net and GRAF SPEE would soon need to return to Germany. Confidential papers from the unfortunate STREONSHALH, indicated to Langsdorff that the Plate Estuary off Uruguay could offer rich pickings and there was mention that a small convoy escorted by a naval auxiliary was due to leave Montevideo on December 10. Captain Langsdorff reversed course for this promising goal, some 2,000 miles away.

Patrolling off the coast of South America, though, was the Royal Navy’s Force G, commanded by Commodore Henry Harwood, who shrewdly calculated GRAF SPEE would make for the River Plate. Early on the morning of December 12, 1939, Harwood’s two 6-inch light cruisers, HMS AJAX and HMNZS ACHILLES, were joined by the 8-inch heavy cruiser HMS EXETER.

The following morning GRAF SPEE was to arrive in the same area, 150 miles east of the Plate Estuary, on a final search for merchant shipping, before returning to Germany for
Christmas. Langsdorff planned to attack the British HIGHLAND PRINCESS, since newspapers taken from his last sinking gave details of movements of merchant shipping in the area he was now in. As December 13 dawned, Harwood’s cruisers were steaming in line ahead, with the early morning visibility already good. Around 6.15am AJAX sighted a plume of smoke far away to the north-east and Harwood ordered EXETER to investigate, having already given much thought to the way his squadron would operate should it meet GRAF SPEE.

Minutes later EXETER signalled: “I think it is a pocket battleship.” Harwood ordered full speed and his ships quickly took up their pre-planned positions, with gun crews manning turrets. GRAF SPEE’s armament was heavier than that of the three cruisers, comprising six 11-inch guns in two turrets, but the British cruisers’ speed was superior to that of the Germans, and, by splitting the enemy’s fire, they stood a chance.

Langsdorff was about to make his first mistake, he thought the force he faced comprised one cruiser and two destroyers, due to the speed of the approaching ships. Believing they were protecting a convoy, and confident he could make short work of the cruiser, he closed with HMS EXETER. This error cost him his advantage, for he could have outgunned the heavy cruiser at a greater range.

At 6.18am GRAF SPEE’s forward turret fired the first salvo. EXETER returned fired two minutes later, followed closely by AJAX and ACHILLES. Within minutes, though, GRAF SPEE’s guns had wrecked EXETER’s B turret and damaged her bridge, killing many of her officers. However, her Commanding Officer, Captain F. S. Bell had survived, and, to save his ship from the hammering she was taking, ordered EXETER’s starboard torpedoes to be fired, forcing GRAF SPEE to turn away.

During the confusion Langsdorff saw his chance to finish off EXETER, but AJAX and ACHILLES raced in with all guns blazing, compelling the German to turn to face them. This provided an opportunity for EXETER to haul off and withdraw from the action, as all her guns were now out of action. Luck was with the British until AJAX’s two after turrets were put out of action by an 11-inch shell.

Harwood ordered torpedoes to be fired and opened the range of both ships under cover of a smokescreen. After 90 minutes the battle subsided. GRAF SPEE had suffered superficial damage to her superstructure and secondary armament, although her main armament remained intact.

Casualties had been heavy in EXETER and her damage control parties now fought to put out the fires and make her seaworthy for the long passage to the Falkland Islands where she could be repaired. EXETER had lost 64 officers and men and AJAX had two of her gun turrets out of action, with seven crew killed. ACHILLES, which had suffered least in the engagement – mainly splinter damage – took up station astern of GRAF SPEE to shadow the enemy ship, keeping just out of range of the 11-inch guns.

Langsdorff now made another significant mistake, for, instead of taking on the two smaller cruisers and finishing the action, he decided to make for the neutral port of Montevideo, in Uruguay, to under-take repairs.

GRAF SPEE anchored just before midnight in the harbour, while Captain Langsdorff reflected on his position. The ship’s bow was damaged, making an Atlantic crossing in winter unlikely. There was also the damage to the ship’s oil separators and secondary armament, with estimates that the

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The Leander class cruiser HMS AJAX. AJAX was one of the three ships that engaged the pocket battleship at the mouth to the River Plate.
pocket battleship had taken over 50 hits. In addition, 50 per cent of the ammunition had been expended and food supplies were low and with no German bases or supply ships near enough to be of help.

Over the next four days, intense diplomatic pressure and manoeuvring took place ashore. The Germans wanted 14 days to conduct repairs. The British wanted GRAF SPEE to stay in Montevideo for four or five days at least, to enable reinforcements to reach AJAX and ACHILLES. However, on the diplomatic front, so as not to reveal their weakness in having just two waiting RN ships, the British were insisting GRAF SPEE should not be allowed to stay for longer than 24 hours.

In the meantime the British also made sure cargo ships sailed daily from Montevideo, as this prevented GRAF SPEE from leaving. International regulations stated that 24 hours had to elapse after a merchantman had departed a neutral port before a belligerent could also sail from the same place. The battlecruiser HMS RENOWN and the aircraft carrier HMS ARK ROYAL were still several thousand miles away.

In Montevideo, erroneous BBC broadcasts reported on reinforcements of a battleship and aircraft carrier, probably ARK ROYAL, which had joined Harwood’s cruisers at the mouth of the River Plate. It was also known that heavy cruiser HMS CUMBERLAND was steaming from the Falklands at top speed, as a replacement for EXETER. German diplomats pleaded with the Uruguayan Government for 15 days grace to make GRAF SPEE seaworthy, but this was refused. The repair work went on aboard her as she received fuel, steel plates and welding equipment – preparation for the climactic battle to come.

Sunday December 17 dawned, with the populace of Montevideo flocking to the harbour and seashore, hoping to see the wounded German ship sail to death or glory. Diplomatic activity continued throughout the day, but shortly after 5pm GRAF SPEE raised first one anchor, then the second. At 6pm, onlookers were surprised to see many of her crew leaving, transferring to the TACOMA, a German merchant ship in the harbour. Then, at 6.19pm, GRAF SPEE left the inner harbour with only a skeleton crew on board. She slowly sailed down the fairway, followed by several launches. At 6.40pm she turned west, as if making for Buenos Aires, then turned again and moved slowly toward the open sea. At 7.00pm she halted in the middle of the estuary and observers thought that Langsdorff was waiting for darkness to make a dash through the waiting British warships.

A terrific explosion ripped through the ship, followed by a great column of smoke, and flames leaping into the sky. The time was 7.50pm. Playing out before the eyes of the world was a drama of defeat and ignominy, not one of German bravery and defiance! It was thought that Langsdorff had died with his ship, but boats were later seen moving away from the wreck and they were taken aboard the TACOMA.

Speculation held that Hitler was furious because the ship was trapped and had ordered her to be scuttled. But communication between GRAF SPEE and Naval High
Command in Berlin expressly forbade internment and proposed two options. Option one was to attempt a breakout into the Atlantic or to Argentina, but, if either were likely to result in the destruction of the ship, option two was to scuttle. Langsdorff, had maintained there was no solution but to sink his ship by blowing her up near the coast, since breaking out into the Atlantic would be pointless considering GRAF SPEE’s condition. Going to Argentina would bring the same problems experienced in Uruguay. As the glow of sunset reflected off the water, the explosions inside GRAF SPEE’s hull continued, providing a memorable spectacle for the onlookers. Finally the ravaged hulk settled into the water, a humiliating end for a once proud warship that had sunk over 50,000 tons of allied shipping and tied down many Royal Navy warships.

Captain Langsdorff reached the safety of pro-German Argentina where he was to state in a note: “I am quite happy to pay with my life for any possible reflection on the honour of the flag.” He wrapped himself in the Imperial German Flag and shot himself. The world realised that this was the final gesture of a truly gallant seaman, who had gone against the Fuhrer’s orders and chose to save his crew from certain death. In Germany, the Nazi propaganda machine found it hard to explain what had transpired.

The GRAF SPEE’s Captain, Hans Langsdorff. After he scuttled his ship he claimed full responsibility for its defeat and shot himself whilst wrapped in a German Navy Imperial Flag.

GRAF SPEE
CLASS: Deutschland.
LENGTH: 596ft.
DISPLACEMENT: 11,700 tons (standard).
DRAUGHT: 24ft (deep load).
MACHINERY: 2 MAN diesels generating 54,000 bhp.
ARMAMENT: 6 x 289mm; (11-inch) guns; 8 x 150mm; 6 x 105mm.

AIRCRAFT: 2.
CREW: 619-1,150.
TOP SPEED: 28 knots.

EXETER
CLASS: EXETER.
LENGTH: 540ft.
DISPLACEMENT: 10,490 tons.
DRAUGHT: 21ft (deep load).
MACHINERY: Geared steam turbines generating 80,000shp.
ARMAMENT: 6 x 8-inch guns; 4 x 4-inch.
AIRCRAFT: 2.
CREW: 630.
TOP SPEED: 32 knots.

CUMBERLAND
CLASS: Kent.
LENGTH: 590ft.
DISPLACEMENT: 9,750 tons.
DRAUGHT: 22ft (deep load).
MACHINERY: Geared steam turbines generating 82,000 shp.
ARMAMENT: 8 x 8-inch guns; 4 x 4-inch.
AIRCRAFT: 1.
CREW: 710.
TOP SPEED: 31 knots.

AJAX and ACHILLES
CLASS: Leander.
LENGTH: 522ft.
DISPLACEMENT: 6,985 tons standard.
DRAUGHT: 20ft (deep load).
MACHINERY: Geared turbines, generating 72,000shp.
ARMAMENT: 8 x 6-inch guns; 4 x 4-inch.
AIRCRAFT: 1.
CREW: 570.
TOP SPEED: 32 knots.

(*) This article first appeared in the UK based Magazine WARSHIPS IFR and is reproduced with the kind permission of the Editor.

In 1959 the story of the Battle of the River Plate was told on the big screen with a British production entitled The Battle of the River Plate. Here is one of the original movie posters advertising the film which started Peter Finch as Capt. Hans Langsdorff, Anthony Quayle as Commodore Harwood and John Gregson as Captain Bell, CO of EXETER.
Navy League calls for improved Air Defence

The Royal Australian Navy’s ability to protect Australian interests from military and terrorist threats was being hampered by inadequate air defence capabilities. The Navy League of Australia, whose national membership includes a wide range of people with an interest in maritime affairs, has said that there was a pressing need for the Navy to be provided with a credible area air defence capability.

The Federal President of the Navy League of Australia (NLA), Mr Graham Harris, said: “With the Australian Defence Force (ADF) increasingly likely to be called upon to intervene within Australia’s area of strategic interest – which could be in response to regional terrorist or more serious threats – forward deployed units of the ADF need to be assured they can be protected from air and missile attack.

“While the Government has made a commitment to acquire three or four air warfare destroyers this will not happen before 2013. The Government needs to address the earlier acquisition of these ships as well as the immediate air defence requirement by fitting improved air defence missile systems in the Navy’s existing ships” he said.

A number of other matters of national importance were considered at the Annual Council Meeting of the League held recently in Canberra.

“The serious under-manning of the Navy, particularly in important technical and seaman officer categories, is seen as a particularly serious issue and could be prejudicial to the future conduct of naval operations,” Mr Harris said.

“The inability of Navy to maintain its approved manpower levels is seen primarily as a failure on the part of the new centralised Defence personnel organisation, and the Department’s public relations.”

The Council, which is a strong supporter of the Australian shipbuilding industry, both naval and civilian, noted both the economic and industrial benefits this activity brought to Australia.

In the case of the vibrant high speed catamaran industry and the increasing involvement with the United States Military, the Council is firmly of the opinion that in negotiating a Free Trade Agreement with the United States, the Government should seek to have the US Government revoke the Jones Act as it applies to Australia. The Jones Act is American legislation which prohibits the import of ships into the USA.

The Navy League expressed its particular concern that the Howard Government has presided over the virtual demise of the Australian shipping industry. The NLA strongly recommends that the Government begin to redress this situation by implementing the recommendations of the Sharp Morris Report (September 2003).

The report recommends the Government introduce a wide range of measures, particularly in the areas of regulation and taxation to re-vitalise the industry.

Australian-owned and operated shipping services are seen not only as an important element of the Australian economy but also provide essential strategic sea lift capability for any military or quasi-military operations, whether offshore or in the direct defence of Australia, and as a reservoir of sea-trained personnel, the Navy League said.

The recent re-arrangement of ministers within the Howard Ministry whereby a separate Assistant Minister for Defence now has responsibility for defence personnel was welcomed.

“Minister Brough, as his first priority, must address the many problems in this vital area,” Mr Harris said.

Adelaide wins Collins contract

The Australian Submarine Corporation has been awarded a contract worth up to $3.5 billion over 25 years to refit the Collins class submarines.

The refits of each submarine will be conducted on a 12-month cycle in Adelaide under a long-term maintenance agreement to be signed by the ASC and the Defence Material Organization.

Senator Hill and Senator Minchin said the contract reaffirmed ASC’s reputation as Australia’s pre-eminent centre for submarine construction, modification, repair and maintenance.

The skilled ASC workforce at Osborne is integral to Australia’s long-term submarine capability. This contract is a significant investment in Australian technology and intellectual capital to ensure the proper service and maintenance of our fleet, which are the most capable conventional submarines in the world.

The initial duration of the agreement is for 15 years, with the option to extend it for a further 10 years. Each refit of a submarine costs about $80 million. The fleet of six Collins class submarines will be refit every seven years over their 28-year lives. The 25-year contract could be worth up to $3.5 billion, the majority of which will be spent in Adelaide providing full cycle dockings – a huge boost to the South Australian economy. The remainder will be spent on other submarine maintenance activities.
including mid cycle dockings and other contractor work to be carried out primarily in SA and Western Australia, where the submarines are homeported.

It provides significant benefits to Defence, local industry and subcontractors by securing long-term, in-country support for a key strategic defence capability while providing commercial certainty to ASC.

ASC completed the submarine build contract earlier this year and has been involved in maintenance of the Collins class since 1996.

HMAS WALLER will be the first submarine to be refitted under the new contract which is expected to commence in late 2004. HMAS WALLER will benefit from the experience ASC has gained on the current refits of HMAS COLLINS and FARNCOMB.

New sweeps delivered

ADI Limited has handed over in Adelaide the first of 16 new generation acoustic minesweeps ordered by the RAN.

The Australian Acoustic Generator (AAG) is a water driven, turbine powered sweep which can be programmed to emulate the acoustic signatures of specific classes of ships.

Developed by ADI in conjunction with the South Australian company, Resonance Technology and DSTO, the AAG reflects Australia’s ability to design and manufacture world leading mine countermeasures systems.

The RAN and the Polish Navy purchased the first generation AAG some three years ago. ADI made enhancements to the generator following a test and evaluation program by the RAN, and additional orders followed earlier this year.

Compared to older technology noise generators, the AAG provides a stable acoustic line structure, increased towing speed range and an acoustic spectrum which can be programmed to emulate the acoustic signature of a particular class of ship.

All of these features are required to defeat modern mines equipped with sophisticated sensors and computerised signal processing capabilities.

Eight countries including Denmark, Japan and the United States have bought the system.

By LCDR Andrew Stackpool, NAVY NEWS

RAN begins Super Seasprite trials

The RAN has begun acceptance testing of the SH-2G (A) as an Interim Training Helicopter (ITH) after receiving a critical ‘intent to proceed’ from the Australian Commonwealth. The first Super Seasprite was provisionally accepted at a ceremony at Nowra last October.

Kaman Aerospace International Corporation presented the first aircraft for production acceptance in July following the Commonwealth’s decision to continue to plan for provisional acceptance, upon completion earlier last year of Critical Design Reviews of the final integration software.

In parallel with the acceptance process, the RAN’s Super Seasprite helicopter squadron, 805 Squadron, has commenced training of the SH-2G (A) maintainers. Additionally, Kaman’s Australian agency for training Australian Navy personnel, Scientific Management Associates, has now been certified to conduct flight training.

The RAN is currently conducting SH-2G (A) First of Class Flight Trials (FOCFT) and shipboard interface testing after provisional acceptance, operating under a special flying permit.

The first helicopter recently landed aboard HMAS WARRAMUNGA which was berthed at Garden Island, Sydney, at the time.

“This is a major milestone for Kaman Aerospace as well as the Australian Project Office,” said Sal Bordonaro Kaman’s General Manager of Helicopter Programs. “The successful completion of the detailed software review and commencement of the training by 805 Squadron maintainers and pilots is a significant event in the overall schedule for final acceptance and operational introduction of the Super Seasprite”. Kaman, along with Northrop Grumman Information Technology (NGIT) and Computer Sciences Corporation (CSC) Australia, will continue to develop the Super Seasprite’s final operational system software while the aircrew training and shipboard interface testing proceed in parallel.

SH-2G (A) flight training will initially be for Australian Navy test pilots that will conduct FOCFT and subsequently transition training for 805 Squadron instructor aircrew. Kaman is planning to have six of the eleven SH-2G (A) Super Seasprites accepted in order to support the initial flight test and training program. Four additional Seasprites are completing flight out at Nowra and will be offered for provisional acceptance when complete, with the eleventh SH-2G (A) remaining at Kaman’s helicopter facilities in the USA for the support of continued software development and flight testing.

The Australian Defence Force is looking toward a SH-2G (A) training and utility capability under an Australian Military Type Certificate in the second quarter of 2004 and delivery of the full capability of the ITAS weapons system software by the end of 2004.
WARRAMUNGA’s ESSM firing success

The RAN has successfully test fired another of the new Evolved Seasparrow Missile (ESSM). The ESSM is one of the next generation of ship self-defence weapons against the latest anti-ship missiles.

The firing took place from HMAS WARRAMUNGA at the USN’s Pacific Missile Range Facility off Hawaii.

HMAS WARRAMUNGA is the first Anzac to be fitted with the missile and leads the way for it to be brought into service in the remaining Anzac ships.

The test firing off WARRAMUNGA is part of the operational evaluation stage of the project which is being managed by the Defence Materiel Organization, while the DSTO participated in the development and test programs for the missile.

The missile has been developed, tested and manufactured under a cooperative program by Australia, Canada, Denmark, Germany, Greece, the Netherlands, Norway, Spain, Turkey and the United States.

The ESSM is now expected to be fitted in the other Anzacs along with significant combat system software and illumination radar upgrades.

This will make the RAN the first navy world-wide to bring the ESSM into active service.

By LCDR Andrew Stackpool, NAVY NEWS

A ESSM leaves the Mk-41 VLS of HMAS WARRAMUNGA during trials to integrate the new missile into the RAN. (RAN)

Thales sonar upgrade for Collins class

The Defence Materiel Organization has signed a $22.9 million contract with Thales Underwater Systems Pty of Rydalmerse NSW to provide a new suite of data processors and sonar displays as part of the SEA1439 Replacement Combat System (RCS) project for the Australian Navy’s six Collins Class submarines.

The contract involves the implementation of Thales Underwater Systems’ (TUS) sea-proven Scylla Sonar Interface (SSI) Sonar display processing engine that has already seen service with the RAN in the Collins Class fast-track combat system augmentation project.

This upgrade contract introduces the latest elements of the new SSI intuitive sonar display architecture and processing from Thales’ highly successful TSM 2233 sonar that is already being implemented globally on Agosta, Scorpene and other SSKs.

The SSI displays and data processing will be integrated with the existing Thales Scylla sonar arrays and processing suite that have operated very successfully since the launch of the first of the Collins Class, HMAS COLLINS, in 1993.

The upgraded sonar will be integrated with the new replacement US Navy CCS MK II Combat System (produced by Raytheon) to be introduced to the Collins Class under the RCS Project.

The introduction of the SSI Processor across all six of the Collins Class platforms represents a significant enhancement to the existing TUS SCYLLA sonar suite on the Collins Class. The new SSI data processors and sonar displays will provide the submarine’s sonar operators with a comprehensive suite of state of the art sonar display capabilities that maximize the sonar operator’s target detection, localization and tracking capabilities.

Under this contract the existing Thales Underwater Systems SSI Processor will be further developed with additional sonar display capabilities across the full set of functions within the Collins Class SCYLLA Sonar Suite. In addition, Thales will also be implementing a new sonar high bandwidth data port functionality based upon technology from the Defence Science and Technology Organization (DSTO). The new SSI ‘opens’ the architecture through TUS’ leading approach to open architecture sonar systems in conjunction with the DSTO.

Thales Underwater Systems will also be providing capabilities for the future implementation of the DSTO CIRCE Self-Noise Monitoring processor to be housed within the Collins Class sonar.

The introduction of this significant sonar enhancement will ensure that the Collins Class submarines maintain their world class sonar capability. This new contract maximizes the investment that the Commonwealth has already made in the Collins Class, and provides the foundation for the future continuous enhancement of Australia’s submarine capability.

Air Warfare Destroyers for PLAN

The Chinese People’s Liberation Army Navy’s (PLAN) second Type 052C guided-missile destroyer was launched from the Jiangnan shipyard in Shanghai on 29 October 2003.

The first of the Type 052C class, designated Lanzhou by some Chinese and Western sources, was launched at the same yard in April of 2003 and is nearing the sea trials stage.

The class are thought to displace approximately 6,000 tonnes with a primary mission of air defence. The Type 052C is fitted with a four-face phased-array radar system, leading some to call it the Chinese Aegis.

While sharing the same basic hull as the new Type 052B destroyers, which are equipped with two single-arm launchers for the Russian-made Shil-1 medium-range air-defence missile system, the Type 052C is fitted with vertical launchers believed to be associated with the HQ-9 theatre air-defence missile system.

Malaysian OPVs arrive

The Royal Malaysian Navy’s second MEKO A100-based offshore patrol vessel has arrived in Lumut in Malaysia, where it will be outfitted and undergo sea trials. The keel for this second ship was laid on 21 December 2001.

The first ship left Hamburg on 1 April and is expected to enter service in late 2004.

The last four units ordered by Malaysia will be built at the PSC-NDSP shipyard in Malaysia.

The ships will be fitted with a 76mm gun and a Mauser 27mm automatic cannon aft above the medium helicopter platform. They will also be fitted for the French made MM-40 Exocet surface-to-surface missile and a short-range air-defence system. It is thought that up to 21 ships may be ordered.
Thailand plans for future

New Thai Navy chief ADM Chumpol Pajusanon plans to improve combat readiness by acquiring new ships with the additional funding the government has promised over the next 10 years. DM Chumpol succeeded ADM Thaweesak Somapa recently.

He said the Defence Ministry budget was set to rise from 16 billion baht to 24 billion baht a year.

The navy planned to purchase two frigates from Britain for about 10 billion baht. Under a bilateral agreement, Britain would import Thai agricultural products or find markets for them as part of the deal.

Other buys would include new armaments and radar systems worth 900 million baht for the aircraft carrier Chakri Naruebet (150 million baht to be spent in the 2003-2004 fiscal year), three coastal patrol vessels costing 300 million baht and two to four offshore patrol vessels for about 1.5 billion baht each.

ADM Chumpol said the navy needed to increase its capabilities because its responsibilities were growing. It would soon begin joint patrols with the nations with adjoining waters such as Malaysia, Vietnam and India.

He also planned an increased public relations effort to explain the navy’s role, and improve intelligence collection and the personnel welfare scheme.

India seeks more Barak

With the much-delayed indigenous surface-to-air (SAM) Trishul missile program still floundering and nowhere near completion, the Indian Navy is planning to acquire several more Israeli Barak anti-missile defence systems for its frontline warships.

The Indian Navy had pressed for installation of six Barak systems on its Delhi Class destroyers and Godavari Class guided-missile frigates, in addition to the one already approved for its solitary aircraft carrier INS Viraat, during the 1999 Kargil conflict. This was necessary since Pakistan had acquired Harpoon and Exocet air and submarine launched sea-skimming anti-ship missiles, which posed a threat to Indian warships.

“We had no effective answer to them. Western countries were not prepared to part with their advanced anti-missile defence systems. So, we turned to Israel,” said an officer.

Now, the Navy wants at least 10 more Barak systems, valued around Rs 100 crore each, to be installed on its other warships, including the Brahmaputra Class frigates, to further bolster its sea-based defences.

“Despite almost 70 flight-tests, the Trishul program is simply not materializing due to repeated snags in the guidance, control and propulsion systems. With the Barak system already being installed on seven warships, it makes sense to make our anti-missile systems Barak-centric and bring in standardization,” said sources.

Similarly, the Navy plans to centre its anti-ship capabilities on the 290-km-range supersonic cruise missile BrahMos being developed jointly with Russia.

The fire-and-forget BrahMos, which can fly at a speed of up to Mach 2.8 is to be introduced in another six months. It is claimed to be more advanced than the anti-ship missiles used by China or Pakistan at present.

The quick-reaction Barak SAM, in turn, is an integrated system, which employs vertically launched missiles and command to line-of-sight radar guidance, to destroy incoming sea-skimming missiles and hostile aircraft.

Israel has emerged as the second-largest supplier of military hardware and software to India after Russia in recent years, especially in the field of surveillance and anti-missile systems.

Final Bob Hope class delivered

Northrop Grumman Corporation’s Ship Systems sector has delivered USNS BENA VIDEZ (T-AKR 306) to the USN, successfully completing nearly a decade of construction of the Bob Hope-class ships.

The USNS BENA VIDEZ (T-AKR 306). The BENA VIDEZ is the final Bob Hope class sealift ship to be delivered to the USN. The recent Australian Defence Capability Review called for the acquisition of a sealift ship for the RAN but it is doubtful that it will be in the same size and capability class as the Bob Hope.

(Northrop Grumman)

BENA VIDEZ is the final ship of seven of the LMSR (large, medium-speed, roll-on, roll-off) vessels built by Ship Systems’ Avondale Operations in New Orleans, La. The ship has already conducted successful sea trials and recorded an excellent rating by the USN.

The 950-foot-long ships in the Bob Hope-class are among the largest in the USN’s fleet, and are designed and constructed with more than 380,000 square feet of cargo capacity on six decks. They are capable of carrying up to 1,000 military wheeled and/or tracked vehicles and other cargo.

“We are proud to have built seven great ships in the class, and are particularly pleased with the first six ships’ impressive service in our nation’s war on terrorism,” said George Yount, vice president of operations at Avondale. “We are confident BENA VIDEZ will continue the legacy of constant support as she begins her commissioned service”.

Construction of the vessel began June 7, 1999 with its keel laid on December 15, 1999. The ship was christened BenaVidez July 21, 2001 in honour of Medal of Honor recipient Army Master Sergeant Roy P. BENAVIDEZ, of Lindenau, Texas. In 1968, Sgt. Benavidez distinguished himself in a series of daring and
extremely valorous actions while serving in Vietnam as part of the First Special Forces, U. S. Army. Retired Master Sergeant Benavidez was 63 when he died Nov. 29, 1998 in San Antonio, Texas.

**Pontoon loss sank submarine**

The Russian November class nuclear submarine K-159 sank in the Barents Sea on August 30 because the pontoons keeping it afloat tore off in a violent storm, the press service of the Russian Defence Ministry has said.

Unnamed officers presiding over the scrapping said that the pontoons, which were made in the 1940s, were welded to the rusted hull of the submarine which in parts was as thin as tin foil.

The submarine sank in the early hours of August 30 in the Barents Sea on its way to Polyarny where it was supposed to be scrapped.

The Russian Navy Commander-in-Chief ADM. Vladimir Kuroyedov has said that the wreck of the K-159 will definitely be retrieved.

“The sunken submarine will definitely be raised. We will not leave a nuclear object on the seafloor, despite the fact that its current condition does not pose any kind of threat and our special services did not find any evidence of radioactive pollution,” Kuroyedov said.

“It is somewhat early to talk about the dates, methods, and participants for the raising operation. All these issues are being actively examined. The possibility and necessity of involving foreign companies is being considered as well,” he said.

The K-159 is currently located at a depth of 170 metres. There were 10 people onboard the sub at the time of the sinking. One of them was rescued, two bodies were retrieved, and the remaining seven are still considered missing.

The sub’s nuclear reactor had been brought to safe condition and its ammunition had been unloaded prior to the sinking.

**Delta III test fires missile**

Russia has successfully test-fired a submarine launched intercontinental ballistic missile (ICBM).

The missile was launched by the Project 667BDR (Delta III) submarine PODOL’SK of the Russian Pacific Fleet stationed in the Far Eastern Okhotsk Sea.

Minutes later, it successfully hit its target at the Chizha military target area near the Barents Sea in Russia’s northeast, a Russian news agency quoted navy spokesman Igor Dygalo as saying.

**ALMIRANTE WILLIAMS commissions**

The former Royal Navy Type 22 batch 2 frigate HMS SHEFFIELD has recommissioned as the Chilean ALMIRANTE WILLIAMS. Military and civilian authorities of Chile, the United Kingdom and other countries attended the ceremony. During the commissioning ceremony, the national ensign and commissioning pennant was hoisted and the ship officially named ALMIRANTE WILLIAMS.

ALMIRANTE WILLIAMS is the first of three second hand ships the Chilean Government has authorized the navy to purchase under the terms of Project Puente (Bridge). This program is part of the efforts to replace ships of the current naval surface force that are past their life expectancy. In addition, Project Fragata (Frigate) calls for the construction of three new ships; the first to be built overseas and the next two at ASMAR, Talcahuano.

**Next-generation VLS designated MK 57**

The USN has officially designated Raytheon’s Advanced Vertical Launching System as the MK 57 Vertical Launching System (MK-57 VLS).

The MK-57 launcher is being designed for DD (X) – the next-generation destroyer now being developed by the DD (X) National Team. Raytheon Integrated Defense Systems serves as the ship electronics and weapons systems integrator for DD (X), and the MK-57 development is led by Raytheon in partnership with United Defense, L.P. Construction of the first DD (X) ship is expected to begin in 2005.

“We are proud to be in the forefront of developing new naval systems for DD (X) that will significantly improve ship firepower and survivability,” said Jack Cronin, Raytheon vice president for the DD (X) program. “In addition, the MK-57 VLS will reduce costs by lowering manning requirements and facilitate the Navy’s open architecture vision for ship electronic systems.”

The MK-57 will be able to fire all of the missiles currently in the USN inventory and projected to be in inventory for the foreseeable future. The MK-57 is scaled to accept the heavier missiles that could potentially be used in the future for ballistic missile defence, as well as lighter missiles such as the Evolved SeaSparrow Missile (ESSM).

The MK-57 is also expected to be incorporated into future US and foreign navy ship designs.
Seawolf Block 2

MBDA’s new Seawolf Block 2 naval point defence missile has been successfully fired for the first time at the Vidsel missile test range in Sweden. The new Seawolf Block 2 variant, which will enter service with the RN in 2005, was test fired on 4 September 2003. The missile is designed to operate with existing in-service Seawolf missile systems while benefiting from cost-effective new missile technologies introduced by MBDA. These technologies, coupled with the introduction of a new fuse, have led to significant improvements in the Seawolf missile’s performance.

Technology developments include a new electronic fin actuation system to replace the former gas actuation system, resulting in improved missile control and extended range. Drawing on experience gained from MBDA’s highly successful ASRAAM air-to-air missile programme, Seawolf now incorporates ASRAAM’s multichip module to provide more in-flight computing power in a much smaller package. This technology also greatly simplifies the production process. A new fuse incorporating IR/RF sensors has also been developed to improve engagement success against very low sea skimming, low signature targets. Other enhancements serve to reduce cost and component package size.

MBDA has developed this cost-efficient enhancement to the missile while working with the Royal Navy to meet its future Seawolf warstock requirements. Importantly the Block 2 missile will be compatible with the Seawolf ship system installations in service with the Royal Navy and other Seawolf users. Of significant logistic benefit to navies is the fact that both the conventional and vertical launch versions of the new Block 2 missile now share a common modularity with vertical launch being provided to the standard missile by the simple addition of a boost and turnover pack.

Commenting on the development of Seawolf Block 2, MBDA’s Chief Operating Officer, Guy Griffiths said: “This programme is an excellent example of incremental acquisition, where new technology is being progressively applied to an existing, in-service system in order to enhance its effectiveness. The achievement of this critical firing milestone confirms that this improvement programme is firmly on track.”

With the success of this first test firing, the way is now clear for further test firings of both conventional and Vertical Launch Seawolf Block 2 during 2004. Production deliveries are scheduled for 2005 when the new missile will enter service with the Royal Navy’s Vertical Launch Seawolf missile system for the Type 23 frigates and conventional launch versions, without the turnover boost, for the Type 22 batch 3s.

Seawolf has been the UK Royal Navy’s standard naval point defence weapon system since first coming into service on the later Leander Class frigates and the Type 22 frigates in 1979. The first Seawolf featured a conventionally launched missile. Subsequently, in 1990 the Vertical Launched Seawolf variant, VL Seawolf, entered service on the Royal Navy’s Type 23 frigates. Since 1979, over 1,000 vertical and conventionally launched Seawolf missiles have been fired and the system has been successfully exported to Brazil (conventional launch Seawolf) and to Malaysia (VL Seawolf).

Clemenceau stranded

The former flagship of the French Navy (Marine Nationale) the aircraft-carrier CLEMENCEAU has been stuck off the coast of Sicily as a result of a contractual dispute over asbestos and scrap rights.

Dismembered in 1997 after 35 years of service, the 33,000-tonne carrier was sold to a Spanish company which undertook to tow it for scrapping in the port of Gijon in northern Spain, according to the French defence ministry.

However, after leaving its Mediterranean base at Toulon under tow, the carrier, which had a French frigate as escort, was seen heading not towards the straits of Gibraltar, and thus to Spain’s Atlantic coast, but eastwards towards Turkey.

“There are European conventions on the issue of asbestos removal. A clause in the contract stipulated that the scrapping had to take place in Europe and not in Turkey, where there is reason to believe the European rules are not respected,” explained spokesman Jean-Francois Bureau.

“Faced with this flagrant violation of the commitments made by the company, the French government cancelled the contract,” he said.

Instead the government offered the ship to a German firm which plans to break it up in the Greek port of Piraeus, and with negotiations underway between the two companies CLEMENCEAU was stranded at anchor off the Sicilian coast.

The 265m-long CLEMENCEAU was built at Brest, France in 1957. The vessel was equipped with four steam turbines developing 126,000 bhp and had a speed of 32kt. The ship and its sister, FOCH, became symbolic of former French president Charles de Gaulle’s desire for military independence from NATO.

CLEMENCEAU carried out its last mission in July 1997, before being laid up in Toulon. Plans emerged a few months ago to scuttle the ship off Marseilles to make it an artificial reef, but the idea was dropped. The FOCH was sold to the Brazilian navy and renamed Sao Paulo.

STANDARD gets improved manoeuvrability

White Sands Missile Range (WSMR) successfully launched a Standard Missile Flight Test Round 24 (FTR-24) from the Desert Ship Facility Vertical Launcher on November 15.

The former French aircraft carrier CLEMENCEAU laid up at the Mediterranean port of Toulon. Her fate is currently thought to lie in the Greek port of Piraeus after the carrier was seized by the French when it was realised the scrap metal company that bought her contravened the sale contract.
The FTR-24 flight test successfully demonstrated the increased flight performance capabilities of the Standard Missile 2 Block IIIB equipped with the Manoeuvrability Upgrade package.

The launch achieved all test objectives, demonstrating highly controlled flight performance throughout a sequence of high-G turns.

The Manoeuvrability Upgrade program is a part of the PEO Integrated Warfare Systems (PEO IWS) Standard Missile 2 In-Service Missile improvement effort. This test successfully concludes flight testing of the Manoeuvrability Upgrade capability and is expected to lead to implementation of the upgrade into Fleet missiles in the near future.

Osprey back at sea

The Marine Corps MV-22 Osprey tilt-rotor aircraft completed its latest series of sea trials Nov. 23, using the amphibious assault ship USS BATAAN (LHD-5) as a testing platform.

The V-22 tilt-rotor is a hybrid of helicopter and airplane and was designed jointly by Bell Helicopter Textron, Inc. and Boeing Company. It combines standard aircraft cruise flight with vertical take-off and landing, and short takeoff and landing capabilities. Its mission is to support amphibious assaults by transporting personnel and equipment to a battlefield using high speed and high altitude to bypass enemy troops and terrain.

According to Lt. Col. Kevin Gross, the government flight test director for the V-22 Integrated Test Team, the V-22 has twice the speed and range of the CH-46 Sea Knight helicopter, the aircraft it will replace, and can carry three times the payload.

"Actually, with our wing tanks, we have almost six times the range of the CH-46," said Gross. "We can go 800 nautical miles without refuelling. With refuelling, we can go 2,200 nautical miles."

The V-22 was specifically designed to operate from LHD and LHA-class ships, Gross added.

"It was designed with the required distance between the rotor and the island, and between the left wheel and the edge of the ship," Gross said. "Those are the two constraints that defined the size of the rotor system, the size of the fuselage and the capability of the aircraft."

According to Bill Spruce, the lead Bell-Boeing contractor for the recent testing phase, the purpose of the trials was to verify the efficiency of new software installed to correct a problem that came to light during a previous testing sequence.

"We evaluated software in the installed flight control system to counteract roll tendency that was noted during a previous phase of testing when airplanes were landing in front of the V-22," said Spruce. "In addition, we conducted envelope expansion testing, to increase the wind-over-deck envelope for landings and takeoffs. We also obtained downwash measurements to determine the force of the wind coming off the rotors."

**RAAF win FINCASTLE**

The RAAF anti-submarine warfare hunters have come out on top against an international field of submarine hunters, winning the coveted FINCASTLE trophy, in a competition off the coast of WA.

FINCASTLE is an annual Anti-Submarine Warfare competition held between the Maritime Patrol Squadrons of Australia, Canada, New Zealand and the United Kingdom.

The Chief of Air Force Air Marshal Angus Houston presented the trophy to the RAAF team in a ceremony held at Defence Science and Technology Organization in Edinburgh SA.

In congratulating the Squadron, Air Marshal Houston proudly recognised the skill and dedication of the crew and the excellent performance of the AP-3C.

"I am deeply impressed that once again an Air Force team have excelled in international competition and have successfully regained the trophy. The performance of all the teams was of a very high standard, emphasizing the level of expertise and professionalism of our people."

The competition this year saw the debut of the AP-3C’s and continues its excellent performance since the aircraft’s recent upgrade as demonstrated in Operation Catalyst and operations off the North coast of Australia.

Participation gives the Orion squadrons the opportunity to hone skills needed to perform one of the aircraft’s major combat roles – anti-submarine warfare.

Australia has won the FINCASTLE trophy 13 times though the RAF won it last year.

A parallel competition for maintenance crews is also held. This time around it was awarded to the RAF Maintenance crew.

**Second F-100 frigate delivered to Spanish Navy**

Izar has delivered, fully operational, the second F-100 class frigate, F-102 ALMIRANTE JUAN DE BORBÓN to the Spanish Navy.

The ALMIRANTE JUAN DE BORBÓN (F-102), named after the father of King Juan Carlos, is the second of four frigates completed under the Spanish F-100 program. The ship joins the Spanish fleet only four months after the lead ship, ALVARO DE BAZÁN, successfully completed Combat System Ship Qualification Trials (CSSQT) off the coast of Virginia with the U.S. Navy destroyer USS MASON – the first-ever joint international CSSQT. ALMIRANTE JUAN DE BORBÓN is scheduled for similar trials in fall 2004.

The F-100 is a multipurpose frigate, with a bias towards anti-air warfare and acting as a flagship. The combat system has the capacity for being able to shoot down medium range and/or ballistic missiles.

The US Aegis combat system fitted to the class enables them to engage simultaneous threats from over, under and on the sea. Lockheed Martin provides the Aegis Weapon System to Spain under a Foreign Military Sales agreement between the U.S. and Spanish Navies. The agreement covers production, testing, installation and product life cycle support for Aegis Weapon Systems that will be deployed aboard all F-100-class frigates.

The Aegis Weapon System includes the SPY-1 radar, the most advanced naval computer-controlled radar system. When paired with the MK-41 Vertical Launching System, it is capable of delivering missiles for every mission and threat environment in naval warfare. The system can simultaneously track hundreds of targets while defending against multiple incoming
aircraft, missiles, submarines, torpedoes and attacking ships, and automatically implement defences to protect the fleet. Aegis is capable of countering the existing and emerging threats to a naval battle group, as well as striking inland targets.

APAR tested

The Air Defence and Command frigate HNLSM DE ZEVEN PROVINCIËN successfully tested fired its new air defence system on November 26 and 27 2003. Together with Germany, the Netherlands is the first country in the world to have such a system.

The Standard SM-2 missiles were fired from DE ZEVEN PROVINCIËN at unmanned incoming targets.

These launchings mark the first time the technical working of the air defence system has been fully demonstrated. It involved the testing of a new guidance principle through the help of the multifunctional APAR (Active Phased Array Radar) and the missiles adapted for that purpose. The APAR system uses a 3-D rotational radar for volume search and four phased array panels for search and tracking. Using the pencil beam technology of the passed array radar the ship is able to designate up to 16 targets simultaneously.

The system has been developed in close cooperation with the Royal Netherlands Navy, the German Navy and the Royal Canadian Navy. The U.S. Navy has also been involved, as have been various defence-related industries and research institutes in these countries. Thales Naval Netherlands is the prime contractor. Through extensive integration of sensors and weapons the system has a very short response time, which enables naval task forces or other units to be effectively protected against the modern air threat, both on the open seas as well as in littoral areas.

Petrel for RAN ANZAC frigates

Sydney based Thales Underwater Systems Pty Limited has signed a $21 million contract with Tenix Defence Pty Limited on behalf of the ANZAC Ship Alliance, to supply eight ‘Petrel’ Mine and Obstacle Avoidance Sonar systems for the Royal Australian Navy’s ANZAC Class frigates.

The ‘Petrel’ Mine and Obstacle Avoidance Sonar systems will further enhance the self-protection capability for Australia’s new fleet of ANZAC frigates.

The ‘Petrel’ Mine and Obstacle Avoidance Sonars detect mines and navigational hazards in sufficient time for ships to avoid them.

The ‘Petrel’ Mine and Obstacle Avoidance Sonar has been developed by Thales Underwater Systems in Australia for the Department of Defence and is the first of its type of sonar system in the world. This unique sonar provides a 3-dimensional picture of the ocean ahead of a ship including the sea floor and obstacles in the water column such as mines and other threats to safe navigation. The system can also be used while ships are at berth to detect divers thereby providing a self-defence capability against terrorist threats. ‘Petrel’ Mine and Obstacle Avoidance Sonars are also currently being supplied to the Royal Australian Navy’s FFG Upgrade Project as part of Thales Underwater Systems underwater warfare system.

Scorpene submarine for Chile

Chilean Defence Minister Michelle Bachelet and the Commander of the Navy Admiral Miguel Angel Vergara presided at the christening ceremony of the first of two French-Spanish Scorpene class submarines in Cherbourg, France.

Once the BERNARDO O’HIGGINS becomes totally operational and is delivered to Chile in the second half of 2004 it will be Latin America’s most modern submarine.

The Scorpene class submarine O’HIGGINS is the first completely new vessel to be incorporated to the Chilean Navy since 1984 and is described as “the best conventional submarine of our time”.

The diesel-electric submarine carries a crew of 31, can patrol for 51 days and has been built with a sound absorbing ‘acoustic discretion’ system that makes its underwater movements particularly silent. The 1,700 ton and 66.4 metre long submarine can submerge to 300 meters and cruise at over 20 knots.

The Scorpene class is jointly built by Spanish Izar dockyard and the French Directory of Naval Constructions. Izar concentrates on the sub’s propulsion and the French in the weaponry and state of the art equipment.

The second unit, CARRERA, will be delivered at the end of 2005 with the final assembly and sea trials done by the Spaniards.

The two Scorpene class replace two older British built Oberon class that have been decommissioned. Chile ordered the two new submarines in 1997 at a cost of US$450 million after a long bidding process.

Correction

On page 13 of the last edition of THE NAVY (OCT-Dec 03, Vol 65 No.4) the builder of the high-speed catamaran TSV-1X SPEARHEAD was incorrectly attributed to Austal Ships of WA. This should have been INCAT of Tasmania.
Observations

By Geoff Evans

THE KINNAIRD REVIEW – A CRITICAL REPORT

As has been remarked in THE NAVY before, the Department of Defence has been the subject of numerous reviews and inquiries ever since the separate Service Departments were abolished and their functions merged into a single department 30 years ago. The Kinnaid review into defence acquisition procedures is likely to prove one of the most significant, involving as it does the very large sum of money required to equip a modern defence force.

The Kinnaid recommendations to overcome deficiencies found in the existing acquisition procedures were not confined to the Defence Material Organisation (DMO), but extended to the initial capability assessment process which it contended was failing to provide sufficient advice to enable the government to determine resource needs and priorities in the light of possible options and costs.

The three-man team headed by company director and businessman Malcolm Kinnaid AO made 10 recommendations in all, four of which were referred to by Defence Minister Robert Hill at a press conference launching the review; they were decisions to:

1. Change the structure of the DMO (formed in 2000) and appoint a chief executive officer (CEO) who would be responsible to the Defence Minister for the financial management of the DMO and its 8000 staff,
2. Establish a new capability group within Defence, headed by a very senior official, to assess and cost projects before they proceed to the DMO,
3. Form an 8-member advisory board including four senior private sector representatives to provide outside advice to DMO,
4. Give the new CEO an expanded range of powers to improve the delivery of projects; the powers would include appointments and remuneration.

Other recommendations elaborated on the foregoing.

Some impressions of a very comprehensive report follow.

With regard to (1) and (4) the DMO will in effect be ‘privatised’ and the new CEO – the position was quickly advertised – quite apart from being responsible to the Defence Minister for the financial management of the DMO and its 8000 staff, will decide if uninformed or civilian members will be appointed as project managers. Service personnel will need to be prepared for much longer than normal appointments or transfer to the public service to be considered. It seems the Service Chiefs, in their capacity as capability managers, may cease to have an input once the acquisition process gets under way.

The recommended establishment of a new capability group (2) headed by a 3-star level serviceman or civilian is intended to relieve pressure on the Vice Chief of the Defence Force (VCDF) who presently has responsibilities for capability definition and assessment as well as numerous other roles. Instead of creating another senior position it would seem preferable to appoint a less senior officer to relieve VCDF of the less-important duties.

With regard to (3) the ADF already has many advisers, both inside and outside the Department; an excess of advice can be confusing rather than helpful.

Probably intentionally the Defence Minister qualified acceptance of the Kinnaid recommendations by saying they had been “largely accepted”, thus providing the Government with a way out if some recommendations proved impractical. Cost overruns, such as those reported to have occurred with some items of equipment, are by no means restricted to defence projects, indeed it could be said cost blowouts are a feature of many major civil works. The Kinnaid objectives will not be achieved overnight but hopefully they will be realised in the longer term.

PIRACY ON THE RISE

THE MELBOURNE AGE in November reported a 26% increase in high seas attacks on ships in the first nine months of 2003 compared to the same period in 2002 – a jump from 271 to 344, an almost daily event.

Quoting the director of the International Maritime Bureau, it was stated that Indonesian waters headed the “black list” with 87 attacks, 24 taking place in the Malaccan Straits, one of the most strategically important passages of water in the world.

The bureau director said there had been an alarming increase in violence with pirates using high-tech weaponry including sub-machine guns, rocket propelled grenades and knives. Twenty crew members had been killed and very few of the attackers had been brought to trial; until this happened and the attackers punished, the figures were unlikely to be reduced.

Given the vital importance to Australia of the area in which this violence takes place, in both an economic and a security sense, it might be thought surprising the Government does not put its border protection forces to better use by assisting our neighbours to combat pirates rather than hunting a relatively small number (by international standards) of boat people.
In September 1963, Cockatoo Dockyard in Sydney received an order to construct an Escort Maintenance Ship for the Royal Australian Navy at an estimated cost of £5.3 million. Designed in Navy Office in Australia, the new ship was intended to serve as a floating workshop and advance-base for the support and repair of the destroyers and frigates of the RAN. This support could be provided in operational areas which, in the 1960s, tended to be at considerable distances from established bases and dockyards in southeastern Australia. The ship was also to be fitted with the capability to supply and repair the new weapons then entering service in the RAN, the Tartar and Seacat anti-aircraft missiles and the ASW Ikara missile.

In addition to construction, Cockatoo Dockyard was responsible for much of the detailed design and working drawings. The keel for Ship 221 was laid on No 1 slipway at Cockatoo Island on 23 June 1964. Built to commercial standards the ship’s hull was mostly welded, although the frames were riveted to the shell. Ship 221 was named STALWART and launched by Lady Casey, the wife of the Governor General, on Friday 7 October 1966.

The new STALWART was the second ship of the name in the RAN, the first being a 1,095 tonne destroyer presented to Australia by Britain with four sister ships in 1919. Commissioned in 1920, STALWART (I) was paid off and laid up in 1925. She was sold for scrap in June 1937 and her stripped hull was subsequently sunk off the coast near Sydney, complete with a load of rotten onions that subsequently floated ashore to pollute Bondi beach.

Fitting out of the new Stalwart continued during 1967 with contractor’s sea trials off Sydney between 27 November and 4 December 1967. She was handed over to the RAN at sea on 8 February 1968, and commissioned the following day under the command of Captain G. V. Gladstone DSC RAN.

On 19 February 2003, the passenger ship TARA II arrived at the shipbreakers at Alang in India. This final arrival marked the end of the career of a ship that remains the largest naval vessel yet fully designed and constructed in Australia.

By John Jeremy

Vale STALWART

HM STALWART at sea during her career in the RAN. STALWART went on to be known as HER MAJESTY M and finally TARRA II. She was recently broken up in India. (RAN)

On 19 February 2003, the passenger ship TARA II arrived at the shipbreakers at Alang in India. This final arrival marked the end of the career of a ship that remains the largest naval vessel yet fully designed and constructed in Australia.

In September 1963, Cockatoo Dockyard in Sydney received an order to construct an Escort Maintenance Ship for the Royal Australian Navy at an estimated cost of £5.3 million. Designed in Navy Office in Australia, the new ship was intended to serve as a floating workshop and advance-base for the support and repair of the destroyers and frigates of the RAN. This support could be provided in operational areas which, in the 1960s, tended to be at considerable distances from established bases and dockyards in southeastern Australia. The ship was also to be fitted with the capability to supply and repair the new weapons then entering service in the RAN, the Tartar and Seacat anti-aircraft missiles and the ASW Ikara missile.

In addition to construction, Cockatoo Dockyard was responsible for much of the detailed design and working drawings. The keel for Ship 221 was laid on No 1 slipway at Cockatoo Island on 23 June 1964. Built to commercial standards the ship’s hull was mostly welded, although the frames were riveted to the shell. Ship 221 was named STALWART and launched by Lady Casey, the wife of the Governor General, on Friday 7 October 1966.

The new STALWART was the second ship of the name in the RAN, the first being a 1,095 tonne destroyer presented to Australia by Britain with four sister ships in 1919. Commissioned in 1920, STALWART (I) was paid off and laid up in 1925. She was sold for scrap in June 1937 and her stripped hull was subsequently sunk off the coast near Sydney, complete with a load of rotten onions that subsequently floated ashore to pollute Bondi beach.

Fitting out of the new Stalwart continued during 1967 with contractor’s sea trials off Sydney between 27 November and 4 December 1967. She was handed over to the RAN at sea on 8 February 1968, and commissioned the following day under the command of Captain G. V. Gladstone DSC RAN.
Reclassified as a destroyer tender, STALWART had a standard displacement of 10,690 tonnes and a full load displacement of about 15,250 tonnes. She was 156.21 metres long overall, with a beam of 20.45 metres and a depth of 11.8 metres. Main propulsion comprised two Scott Sulzer 6RD68 direct-drive diesel engines with two 4.54m fixed-pitch propellers. Her designed maximum speed was 20 knots. Air-conditioned accommodation, spacious and comfortable by the standards of the day, was provided for a ship’s company of 395 officers and men. STALWART was the first ship in the RAN to be fitted with a sewage treatment plant.

The ship was fitted with a large flight deck and a hangar to accommodate a Wessex or, later, a Sea King helicopter. As completed, STALWART had an armament of two Bofors 40/60 Mk 5 mountings, and was fitted for, but not with, two launchers for the Seacat short-range anti-aircraft guided missile on No. 04 deck forward of the bridge. During construction, fitting out of the intended facilities for the storage and maintenance of guided missiles was deferred, and later abandoned. This resulted in some large void spaces forward on No 2 and 3 decks and a significant compensating quantity of solid ballast.

Despite these changes, the capability of the new ship was impressive. She could provide steam (provided by a boiler built during World War II and originally to be fitted in a cancelled River-class frigate), electric power, fresh water, compressed air, telephone and tank-cleaning and boiler-cleaning services. A hospital with operating theatre and dental surgery was fitted. Workshops included a smithery, plate, coppersmiths and plumbers shop; a torpedo workshop; sailmaker and life-raft repair shop; a large and capable machine shop; a weapon (power) workshop; sonar dome storage; wood-working shop and a drone target workshop.

Electronic and electrical facilities included a weapon/radio electronic maintenance workshop; an electrical workshop; radar maintenance shop; RATT repair facilities and gyro and instrument repair facilities. She carried spares for attended ships and technical information and drawings for ships in her care. She even had a chapel which also served as a conference room.

Like so many ships of the RAN, Stalwart carried out many tasks, not all of which were intended when she was designed. In addition to providing support to the guided missile destroyers Perth, Hobart and Brisbane, and the River-class destroyer escorts, Stalwart mothered minesweepers and later the guided missile frigates. She became flagship of the Royal Australian Navy and participated in many exercises in Australian waters and the western Pacific. Her excellent facilities proved a major asset in the aftermath of Cyclone Tracy in Darwin in 1974, when she assisted the devastated city in company with other ships of the RAN. December 1985 saw her chartered by the Australian Antarctic Division to resupply Macquarie Island when the usual supply ship NELLA DAN was beset by ice in waters further south.

HMAS STALWART spent much of her time secured stern-to the eastern shore of Garden Island Dockyard as she fulfilled her role in support of the ships of the fleet. This regular presence earned her the nickname of Building 215 (after her pennant number), a sobriquet that did not do justice to her considerable capability and adaptability to the various tasks she was called upon to undertake.

By the 1980s some of the original justification for the destroyer tender no longer existed. The establishment of a major base in the west at HMAS STIRLING and improved support facilities in northern Australia, particularly in Cairns and Darwin reduced the need for such mobile facilities in Australian waters. Recent RAN deployments have shown however that a capability like that of STALWART can be immensely useful, and it is interesting to speculate how she might be used today. We can expect to see a good deal of her capability incorporated in the new ships planned to replace HMA ships TOBRUK, KANIMBLA and MANOORA.

HMAS Stalwart was paid off in Sydney on 9 March 1990. On 3 May 1990 she was sold and shortly thereafter sailed to Greece to begin a new career as a Mediterranean passenger ferry. Re-named HER MAJESTY M she was operated by Marlines SA in services between Greece, Italy, Turkey and France. She was renamed TARA II in 1999.
Australia confronts uncertain threats from global terrorism and regional instability with a renewed emphasis on meeting trouble before it gets to our shores. There is consequently increased emphasis upon military engagement in the resolution of such crises. For this reason, and given the maritime nature of the Asia Pacific region, continued emphasis should be placed on maritime power, with significant implications for Australia’s Navy.

The application of maritime power encompasses a wide range of operational situations from peacetime constabulary or benign activities to full hostilities in high intensity joint situations involving the projection of power. This includes applying naval diplomacy as a means of keeping the peace and thereby avoiding the actual use of the full range of their military capabilities.

Fundamental to the exercise of maritime power and use of the sea is the ability to gain and maintain sea control. Sea control may be defined as that condition which exists when one has freedom of action to use an area of sea for one’s own purposes for a period of time and, if required, deny its use to an adversary. Importantly, sea control includes not only the sea surface, but also the air space above, the water and seabed below, and, particularly in a littoral environment, adjoining land areas. This is a critical capability for any maritime nation that seeks to preserve sovereignty over its resources, territories, right of free trade and interests, and is essential for the joint projection of power. Importantly, from a maritime perspective, implicit with sea control is control of the air above it. It is therefore, a joint responsibility. Without sea control Australia could not have fought in New Guinea in World War II and more recently, the ADF’s operations in East Timor would not have been possible without the ability to sustain the force by sea and the attendant sea control required to achieve this. For the ADF to undertake most of the objectives envisioned by the Government, it will need to establish a certain level of sea control in order for its operations to succeed.

In many senses the ‘workhorses’ of the fleet, major surface combatants, which include both destroyers with a strong air warfare bias and general-purpose frigates, are the vital means by which the Government exercises sea control and its use of the sea in close partnership with the Air Force. Surface
combatants are multi-purpose vessels, uniquely capable of operating across the full spectrum of operations, with an emphasis on anti-air, anti-surface and anti-submarine warfare, but with significant utility in many other areas.

Apart from their primary function of sea control, the surface combatant offers other unique capability options for Government. More specifically, the flexibility of surface combatants in rapid role change between different levels of operations and their ability to apply graduated force commensurate with the prevailing situation across a broad spectrum of operations, make them particularly versatile assets. They are the smallest surface units that are deployed autonomously for extended periods for military tasks, and their numbers and capabilities allow them individually to cover a wide range of military, constabulary and diplomatic tasks. They are particularly useful in establishing maritime presence. They are also versatile building blocks for larger national and coalition formations, essential defensive elements of task groups, and contributors of organic helicopters to a force.

Because warships operating outside the 12nm territorial sea of other countries do not challenge sovereignty in the way that land forces or over-flying air forces do, in some instances warships may be the preferred or only military diplomatic option available to the Australian Government. International legal regimes, such as the United Nations Law of the Sea Convention, allow for warships to linger indefinitely on station, providing ongoing presence and an immediate response to a developing situation. The influence of such presence devolves fundamentally from credible combat power, and the demonstration of military capabilities that can be used to reassure, impress or deter a foreign power. Surface combatants possess substantial combat power, enabling them to exercise a range of influences, from the benign to the coercive, without violating national sovereignty. This range of response makes them particularly useful tools in periods of uncertainty or crisis, providing the Australian Government with the maximum freedom of decision.

The utility of surface combatants in peacetime for policing, interdiction and boarding is considerable and Government has often called upon these inherent capabilities. Examples include southern ocean fisheries law enforcement, remote ocean border protection, support to Government agencies in the board and seizure of ships involved in illegal trafficking of contraband, and regional peace keeping support. In the diplomatic role, surface combatants provide a powerful psychological impression through their perceptible presence while retaining the ability to continue action through to combat if necessary.

While each of these roles can and have been very effectively performed by Australia’s surface combatant force, these types of activities cannot alone be allowed to determine the level of capability invested in new surface combatants. High intensity operations must remain the basic force determinatant, for while advanced surface combatants can effectively contribute to the full spectrum of war fighting missions, the same assertion cannot be made for those ships tailored for the lower end of the spectrum. This is particularly relevant in an era of increasing violence when many of the military capabilities hitherto required for higher order contingencies, are becoming increasingly relevant in situations previously thought of as being constabulary in nature.

In higher intensity operations, surface combatants, which must be fully interoperable with our major allies, can be rapidly deployed and sustained for joint or combined
operations wherever Australia’s national or international interests demand. Surface combatants provide a significant contribution to littoral manoeuvre and land operations and are critical for the joint projection of power in other than benign circumstances. This includes both open ocean and littoral escort to ensure ground forces and their support reach their objective safely, force protection—including area air defence—in support of littoral operations, maritime command and control, fire support for forces ashore, special forces insertion, limited sea lift and support, and evacuation. During the 2003 Iraq conflict many of these capabilities were exercised by Australian surface combatants, which very effectively integrated with the multinational maritime force.

In terms of evolving capability, surface combatants have undergone a significant transformation of their capabilities in recent years. While submarines still pose a threat to both merchant ships and naval vessels, the most significant threat comes from the air in the form of air attack and long range air and surface launched anti-ship cruise missiles. Previous generations of destroyers and frigates carried mostly defensive weapons to screen higher-value ships such as aircraft carriers, amphibious ships and merchant vessels from attack. Today, surface combatants can still carry out those critical missions, but they are increasingly taking on new roles such as land-attack (using both missiles and extended range guided munitions) and theatre ballistic missile defence. With further improvement to their radars, combat systems and missiles, they will also likely play a key role in national or regional missile defence in the future.

In the future, Air Warfare capable Destroyers will seamlessly integrate with other ADF assets, including the Joint Strike Fighter and Airborne Early Warning and Control aircraft (supported by Air to Air Refuelling aircraft), Over the Horizon Radar, Global Hawk, and land force capabilities (especially Ground Based Air Defence systems) to provide a pervasive, networked and continuous air defence umbrella for both maritime and joint littoral operations. This potent complementary joint capability will be critical in order to provide area air defence for an ADF task force deploying from Australian shores and establishing itself in some other place. Furthermore, an air warfare capable destroyer will provide a high level of air control, 24 hours a day, even in the absence of continuous aircraft support. This is particularly relevant given Australia’s maritime geography and the extended ranges at which aircraft may be required to operate within our region. The Air Warfare Destroyer, while having a strong core air warfare bias, will not, however, only be used for air defence. Capable of operating at the highest end of the conflict spectrum, with their significant warfighting and maritime command and control capabilities, they will be Australia’s primary sea control capability across the full spectrum of operations. Given their multi-role capability, the Air Warfare Destroyers could perhaps more appropriately be referred to as ‘Sea Control Combatants’.

While the Air Warfare capable Destroyers will be critical in maintaining air control, particularly during times and in areas where aircraft are not continuously available, they are by no means the sole requirement to achieve sea control. A balanced surface combatant force is essential. The ANZAC Class frigates, which will complement the Air Warfare Destroyer, and which will be progressively updated to improve their self-defence capabilities, will be Australia’s primary sea control capability across the full spectrum of operations. Given their multi-role capability, the Air Warfare Destroyers could perhaps more appropriately be referred to as ‘Sea Control Combatants’.

Maritime power is critical to Australia’s national defence, given our enduring maritime geostrategic circumstances. Fundamental to the exercise of maritime power and use of the sea is the ability to gain and maintain sea control. Major surface combatants, as part of a balanced fleet, provide this critical capability in close partnership with the Army and Air Force. The modern surface combatant remains an adaptable, flexible and potent instrument for the Government to apply to ensure continuous use of the sea and whenever and wherever diplomatic and/or military effect is desired.
MATCH
PARRAMATTA (IV) joins the fleet
On Saturday morning 4 October 2003 at Sydney’s Garden Island the RAN’s newest Anzac class frigate was commissioned into the Navy. HMAS PARRAMATTA is the fourth ship to bear the name and is under the command of CMDR Michael Noonan RAN. The ceremony was attended by the Minister for Defence, Senator Robert Hill, numerous other Senators and MPs, the CDF General Cosgrove, the Chief of Navy Vice Admiral Chris Ritchie, the Secretary of the Department of Defence Mr Ric Smith, the commissioning Lady Mrs Jill Green and ex-PARRAMATTA (III) crew members.

At a press conference at the gangway to the RAN’s latest addition Senator Hill said “this ship is a credit to all who’ve been involved through to design and build, Tenix and all their sub-contractors, to the government officials who’ve worked through the DMO and the other various bodies contributing to its construction, to the crew of the ship that has worked it up to the commission ceremony today. It’s a credit to them all and I think it’s a great day for the Navy and its proud traditions, a great day for the Australian Defence Forces.

“I just want to take this opportunity to wish Commander Noonan and his crew well. We do live in uncertain times. We of course had one ship of this class engaged in action in the recent operations in the Gulf and it performed superbly. It demonstrates that, in operations, these ships are just as good as they were planned to be. But they’re largely made as good because of the quality of the crews that serve on them”.

As the RAN White Ensign was broken for the first time on the ship a Sea King helicopter trailing a large White Ensign below it flew past with perfect timing, signalling the ship’s entry into the RAN.
Perhaps the best way to describe this seven book series is as “The Magnificent Seven”.

Just what does happen to old, surplus and obsolete warships?

For 10 years after World War II many ports, rivers and creeks around the United Kingdom were host to a wide variety of warships–Portsmouth, Plymouth, Penarth Dock, Devonport, the Gareloch, Scotland and Llanelly North Dock, Wales were amongst them.

Once the glamour ships and submarines of their respective Navies, most eventually end their days in the shipbreakers yards, some after years in reserve awaiting the recall to duty which never comes, and others sunk as targets.

The “To Sail No More” series is seemingly gathering a cult following of ship lovers who, like myself are intrigued and have a morbid fascination with photos of those ships of yesterday and once household names, being broken-up.

Five of these soft cover ‘picture books’ relate to the Royal Navy, with parts Five and Six covering the Royal Australian Navy and the United States Navy.

The books are edited by Mike Critchley, Ben Warlow, Ian Buxton, Steve Bush and Daniel Marsden, with the RAN volume by my esteemed colleague Ross Gillett and myself.

In black and white, most photos are afforded a full page and accompanied by a lengthy detailed caption. I quickly found you could spend minutes studying particular photos, whether battleships, aircraft carriers, cruisers, destroyers, submarines, frigates, depot ships or other fleet units, your mind drifting back to a bygone era.

Dating back to World War One vessels through to the missile age, there is a tremendous range of representation and size from battleships to minesweepers and patrol craft.

Battleships and there are plenty of them, some looking pristine and others rust streaked and tired are the most striking examples as the breakers firstly ‘draw their teeth’ by cutting through their massive gun barrels and allowing them to crash on to the teak decks.

Former Royal Navy battleships with well-known names such as VANGUARD, DUKE OF YORK, KING GEORGE V, NELSON, RODNEY, ANSON, HOWE, IRON DUKE, COLOSSUS, MARLBOROUGH, REVENGE, ROYAL SOVEREIGN, RAMILLIES, MALAYA, VALIANT and the battlecruiser RENOWN, they all ended their days in grey and overcast Scottish shipbreaking yards.

United States battleships include SOUTH DAKOTA, INDIANA, WASHINGTON, MASSACHUSETTS, DELAWARE, SOUTH CAROLINA, and the laid-up NEW JERSEY, IOWA and WISCONSIN.

Then there are the British aircraft carriers such as VICTORIOUS, ARK ROYAL, EAGLE, FURIOUS, FORMIDABLE, INDEFATIGABLE, IMPLACABLE, BULWARK, OCEAN, GLORY and UNICORN with US entries including CORAL SEA, MIDWAY, FRANKLIN, BUNKER HILL, ORISKANY, BON HOME RICHARD, HORNET, SALERNO BAY, FORRESTAL and SARATOGA. Australia’s MELBOURNE and SYDNEY appear in Part Five.

Many still looking graceful and well maintained, British cruisers such as SHEFFIELD, GLASGOW, BIRMINGHAM, GAMBIA, TIGER, LION, AJAX, CUMBERLAND, SWIFTSURE, DIDO, CLEOPATRA, MAURITIUS and SUPERB along with Australia’s AUSTRALIA and HOBART and the US Navy’s LONG BEACH, OREGON CITY, DAYTON, NEWPORT NEWS, VICKSBURG, WORCESTER, OKLAHOMA CITY, HUNTINGTON, FOX and GRIDLEY are included.

Among Royal Navy destroyers and frigates included are: DIAMOND, DEVONSHIRE, JAVELIN, ESKIMO, BROADSWORD, CAPRICE, CHEVIOT, TRAFALGAR, DELIGHT, SOLEBAY and the Frigates AMETHYST, BLACKPOOL, LOCH LOMOND, OXFORD CASTLE, ULSTER, BRAVE, BEAVER, LEOPARD, JUPITER and RUSSELL.

British submarines include TALL Y HO, AMPHION, TRUMP, TRENCHANT, ANDREW, RORQUAL, SERAPH, OBERON, WALRUS and TIPTOE with the USN Part Six represented by SKIPJACK, BONITA, PAMPANITO, BOWFIN, NAUTILUS, BARBEL and ANDREW JACKSON and others.

The series is an interesting addition to the existing naval literature and is thoroughly recommended reading.

**PRODUCT REVIEW**

**TO SAIL NO MORE**

Website Site: www.navybooks.com.
E-Mail: orders.marbooks@virgin.net.
Recommended price (UK 14.95 pounds)
Reviewed by Vic Jeffery

**Enemy on Island, Issue in Doubt**

The Capture of Wake Island December 1941

By Stan Cohen
Soft Cover 106 pp illustrated
Pictorial Histories Publishing Company
Reprinted 1998
Reviewed by Paul D. Johnstone

A short but full in detail booklet Enemy on Island, Issue in Doubt. The Capture of Wake Island December 1941, is a informative and easy read. Filled with photographs, maps, diagrams, technical data, sketches and propaganda cartoons it provides significant information regarding this event of
Imperial Japanese and American history. Well researched it tells the pre war history of Wake Island as a Pan Am clipper station and explores both the role of USMC on the island, its stoic defence, entry into captivity and survival.

One particular short story relates to that of LT. Col. Charles Harrison who was captured on Wake Island by the Japanese and had the misfortune of later being captured by the Chinese in 1950 near Changjin Reservoir during the Korean War.

If anything is a downside of this book is its relative shortness at 106 pages and the failure to achieve a complete synergy with the included updates since it was first printed in 1983. In regards to having a people side, this book manages this component in as much that it is still factual and delivers a serious historical account that will also please the historian.

Containing a balanced combination of both colour and black and white photos from prior to the war until recent times it relates well the story of how Wake and Guam were the first sites of USMC defeats since 1846. *Enemy on Island. Issue in Doubt* which takes its title from the famous message communicated by the Commander of the Wake Island garrison Admiral Winfield Scott Cunningham to Hawaii is different from many of the books I have reviewed in the past. This book has many surprising qualities and its length should not be a deterrent to the reader.

**Hitler’s Miracle Weapons,**
*Secret Nuclear Weapons of the Third Reich and their Carrier Systems*

*Volume 1*

*By Friedrich Georg*

*Hard Cover 127 pp*

*Helion & Company Lt*

*Reviewed by Lionel Hutz*

How close did Hitler come to his dream of developing nuclear weapons? What evidence is there for the design, testing and production of such weapons? *Hitler’s Miracle Weapons, Secret Nuclear Weapons of the Third Reich and their Carrier Systems* is the first volume in a series of at least three where German author Friedrich Georg has begun to answer these questions in great detail. The result is a groundbreaking and controversial book in which the author claims that Nazi Germany developed and tested nuclear weapons by 1944.

This first volume describes the efforts of the Luftwaffe and Kriegsmarine to design and produce carrier systems for the nuclear weapons the scientists of the Third Reich were developing. Following an introductory section in which the author outlines the Nazi nuclear weapons programme, Georg then investigates the enormous variety of craft the Luftwaffe began to either adapt, or develop, that would be used to carry such weapons of mass destruction. These included the search for the much talked about intercontinental ‘Amerikabomber’, designed to attack New York and Washington DC. Lighter designs such as the Messerschmitt P 1107, 1108 and Junkers EF 132 and 140 are also described. Air delivered bombs are also investigated from the 1-ton to the massive 30-ton bomb. Information on a variety of carrier systems that were being developed for the Kriegsmarine is also presented such as the world’s first submarine launched ballistic missiles. Finally the author explains why Germany failed to use nuclear weapons.

The Appendices in the book are provided to supply the reader with the most up to date understanding of the sources of Georg’s arguments.

Apart from black and white photos and other images, *Hitler’s Miracle Weapons Volume 1*, features 16 full pages of colour photos of scratch built models of many of the aircraft and vessels that were designed for the Third Reich but didn’t make it, as well as line drawings and computer generated artwork showing these craft ‘in action’.

Despite the book being expensive at $95, it is a rather amazing account of the German military’s scientific, research and experimental weapons programme which is still the envy of the world’s military today. While the claims in the book about German nuclear weapons and research seem fantastic at times they usually can be corroborated by another source.

The book is thoroughly recommended for anyone with a keen interest in German military technology of world war II.
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 littoral 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 co-ordination 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.
- 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 unmanned surveillance aircraft such as the GLOBAL HAWK 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 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 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.
The RN Type 22 batch 3 frigate HMS CUMBERLAND at sea and mounting a new 114mm Mk-8 gun with stealth shielding. The batch 3 Type 22s are the only Type 22s still in service with the RN. The former batch 2 Type 22 frigate, SHEFFIELD, was recently re-commissioned in the Chilean Navy with more of the batch 2s expected to end up in Chilean hands (see Flash Traffic section in this edition for more details). (RN)

An impressive and powerful sight. The Nuclear powered Nimitz class aircraft carrier USS GEORGE WASHINGTON, with escorts, heading towards the Persian Gulf region for a scheduled deployment. The surface combatant escort consists of three Ticonderoga class cruisers, three Arleigh Burke class destroyers, one FFG-07 class frigate and a support ship. Large escort flotillas such as this haven’t been seen since the height of the Cold War and are more to do with the escorts’ ability to fire Tomahawk cruise missiles than defending against conventional threats such as aircraft or submarines. (USN)
It can only be hoped that the lessons of having a large aviation capable ship are not lost on successive governments. (RAN)