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THE NAVY

The Magazine of the Navy League of Australia

Piracy on the Rise

Time to Put The Cat Out

Fremantle's Wartime Inferno

Tomcat Tales

Australia's Leading Naval Magazine Since 1938

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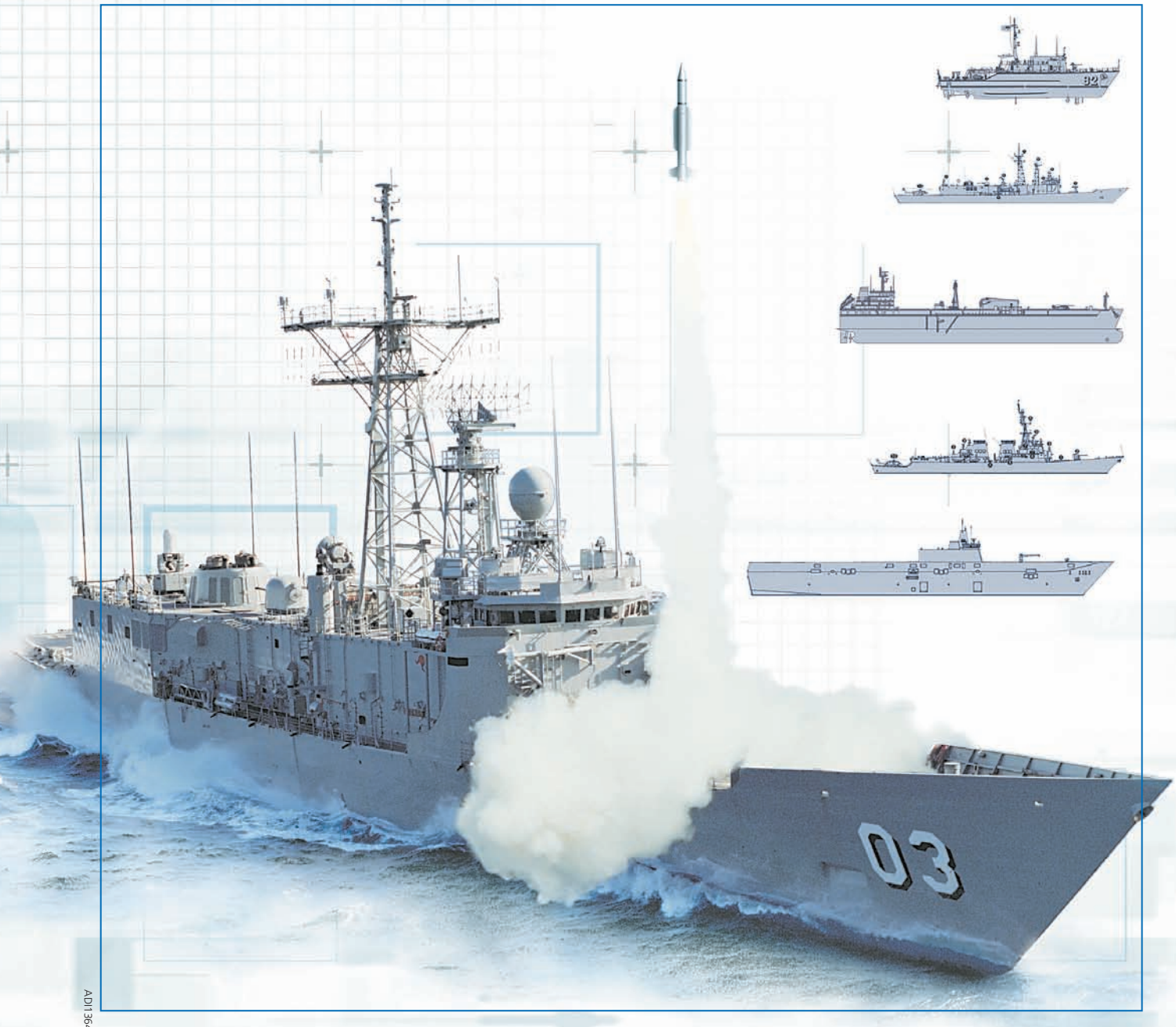

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THE NAVY

Volume 67 No 2

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Front cover: An F-14B Tomcat of VF-32 about to launch off the USN carrier USS HARRY S. TRUMAN. The F-14 is about to retire from USN service despite a recent modernisation to expand its role from air superiority to include strike, as seen by this Tomcat equipped with two 500lb. laser guided bombs on the belly pylons which normally carried the impressive AIM-54 Phoenix missile. (USN)

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FROM THE CROW'S NEST

The recent devastation wrought on the coastlines of our northern neighbours has served to highlight the emerging 21st century role of the military, and focus many on the real possessor of weapons of mass destruction, Mother Nature. Despite Australia being one of the first nations to react it seemed from the early stages that the US Navy, in the form of the aircraft carrier USS THEODORE ROOSEVELT, contributed significantly at a time when it was most needed in order to save lives. The flexibility of the aircraft carrier, and Navies in general, for this sort of work has never been doubted by many of the world's military experts. THEODORE ROOSEVELT's aircraft, specifically its helicopters, were vital. As were the 'hotel' services of the ship which were able to produce large volumes of clean drinking water for the many who had lost access to such a simple life giving necessity.

Many Australian Parliamentary memories do not extend to the devastation wrought upon Darwin during the seventies by Cyclone Tracey (coincidently at a similar time of the year) and the disaster relief effort following. One of the real workhorses of the relief effort was the much-maligned Australia aircraft carrier HMAS MELBOURNE. Again, the aircraft carrier's flexibility came to the fore in a role it was not designed for. But does this lesson, and the recent lesson off Indonesia, still ring loud in Australia?

Australia's two new helicopter carriers (i.e. the ADF's amphibious capability requirement), while not being in the same league as the THEODORE ROOSEVELT, will be very capable at conducting disaster relief operations and will prove themselves vital to our own and the region's disaster relief efforts in the future. The ships will not only provide and support helicopter operations but contain full hospital, command and communication facilities and have the ability to carry numerous military vehicles such as heavy engineer equipment. This capability is currently lacking in the ADF, which will be brought into the 21st century in more ways than one with the introduction of these two ships. Thus, let us hope that party politics and self proclaimed 'Strategic Think Tanks' do not succeed in scuttling this vital national capability in the interests of notoriety in order to boost profits.

By Themistocles

The US Navy's USS ABRAHAM LINCOLN was one of the first naval units on the scene and provided helicopter evacuation, food supply drops and even transported fresh water in plastic bottles made by the ship's own water purification system. Truly a great disaster relief capability. (USN)

FROM OUR READERS

AN OPEN LETTER TO VICE ADMIRAL CHRIS RITCHIE, CHIEF OF NAVY.

Dear Admiral Ritchie

During the last federal election campaign, Prime Minister Howard stated that two more Armidale class patrol boats would be built to bring the class to 14 ships. With this in mind I would like to put forward a request that the following names be considered.

They are MURCHISON and VOYAGER. I understand that these names break with the current line of naming the patrol boats after regional cities. Yet both names have a rich history with the RAN and both should be seriously considered.

For those unaware the first HMAS MURCHISON (K-442/F-442) was a Modified RIVER (BAY) class frigate built in Australia by Evans Deakin and Company Limited at Brisbane in Queensland, launched in October 1944 and commissioned in December 1945. Named after the Murchison River in the North West of WA, which rises in the Robinson Range and flows into the Indian Ocean at Gantheaume Bay. HMAS MURCHISON served with distinction during the Korean War. Known as the 'Baron of the Han', MURCHISON engaged in several close quarter gunnery duels with Communist artillery units during missions deep up the Han River from July to September 1952. MURCHISON was decommissioned in January 1956. For her exploits in Korea alone, the name MURCHISON and her motto "With Undaunted Heart" should be revived within the RAN.

The first HMAS VOYAGER was a W class destroyer that was commissioned into the RAN in 1933. VOYAGER I saw service in the Second World War in both the Mediterranean and Pacific Theatres. Her battle honours are Calabria 1940, Libya 1940-41 (where VOYAGER made the Tobruk ferry run 11 times), Greece 1941, Crete 1941, Mediterranean 1941, and Pacific 1942 before the destroyer was run aground and abandoned on Betano beach on Timor and scuttled in September 1942.

As is commonly known the second VOYAGER was a Darling class destroyer (D-04). Built in Sydney, she was commissioned in 1957 and served with the RAN until the accident with HMAS MELBOURNE (R-21) off Jervis Bay in February 1964 with the loss of eighty-two sailors.

Both VOYAGERS' have made history with the RAN and it is still a worthy name for a fighting ship. With the motto "Where Destiny Calls" naming a patrol boat VOYAGER would honour both ships, as well as those lost during the accident.

I am sure others will have thoughts on these names, or have their own ideas. For myself, I would like to see these names above all the others onto our fighting ships, the Armidale class being the most appropriate ships available at this time.

Ian Johnson
Naval Historian and author.
Fremantle, WA

Sea Power Ashore and in the Air

2005 King-Hall Naval History Conference

SEA POWER ASHORE AND IN THE AIR

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

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

General Information

Venue:

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

Registration:

Two day conference $200.00 per person

(This includes lunch, morning tea and afternoon tea)

Proceedings:

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

Conference Dinner:

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

Further Information / Submission of Registration Forms:

Sea Power Centre-Australia Conference Co-ordination Cell

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

DPS FEB049/05

SEA POWER CENTRE AUSTRALIA

NAVY

Time to Put the Cat Out
The F-14 Tomcat

The US Navy is about to retire its front line carrier borne fighter the F-14 Tomcat. A Stalwart Warrior of the Cold War the Tomcat has been in service for 30 years and undergone three major modifications to improve its lethality and longevity. Sadly, funds for continual upgrades are no longer available with the F-14 being replaced by the new Boeing F/A-18 E/F Super Hornet. *THE NAVY* takes a look at the history of the Tomcat, with a few cat tales as well.

DEVELOPMENT

In the late 1950s, the US Navy was interested in obtaining an interceptor to protect carrier battle groups from adversary strike aircraft. For this the Douglas aircraft company proposed an aircraft named the F6D-1 'Missileer'. The Missileer was to carry an advanced radar and eight large Bendix AAM-M-10 Eagle long-range air-to-air missiles (AAMs) to knock down intruders at distances of up to 205 kilometres (110nm), before they could get close enough to be a real threat.

The whole idea was at least a bit ahead of its time and the development program didn't go well. The Missileer itself began to look unpromising, since it was envisioned as a lumbering missile truck that would not be capable of close-in dogfighting, and the Eagle missile program faltered as well. The Missileer was cancelled in December 1960. However, the work on the advanced radar was not abandoned, and the US Navy still retained the requirement for a fleet-defence interceptor.

In the early 1960s, American Defense Secretary Robert S. McNamara wanted to promote commonality of equipment between different US armed services, and he believed that the Navy could fill their requirement for a fleet-defence interceptor with a navalised version of the US Air Force's variable geometry or swing-wing General Dynamics F-111A. Few thought this was a good idea since the F-111 was a big, heavy machine, not all that adaptable to carrier operation, but McNamara insisted.

The US Navy never became enthusiastic about the F-111B, as their variant was designated. The prototype performed its initial flight on 18 May 1965, with flight trials leading to a Navy report in October 1965 that concluded the

The initial prototype of the F-14A performing its first flight on 21 December 1970 (Grumman)

The Tomcat's impressive array of weaponry, Sidewinders to Sparrows to Phoenix to bombs. The D model would be known as the Bombcat due to the specialised air-surface precision guided munitions it could emply.

Two of the Tomcat's air-air weapons. From top to bottom; the AIM-9L Sidewinder heat-seeking AAM on a side mounting off the main under wing pylon and a AIM-7 Sparrow semi-active radar homing AAM.

The heart of the Tomcat arsenal, the AIM-54 Phoenix AAM. The Tomcat could carry six Phoenix which could be used to engage six targets simultaneously at 100nm (185km) and in fire-and-forget mode.

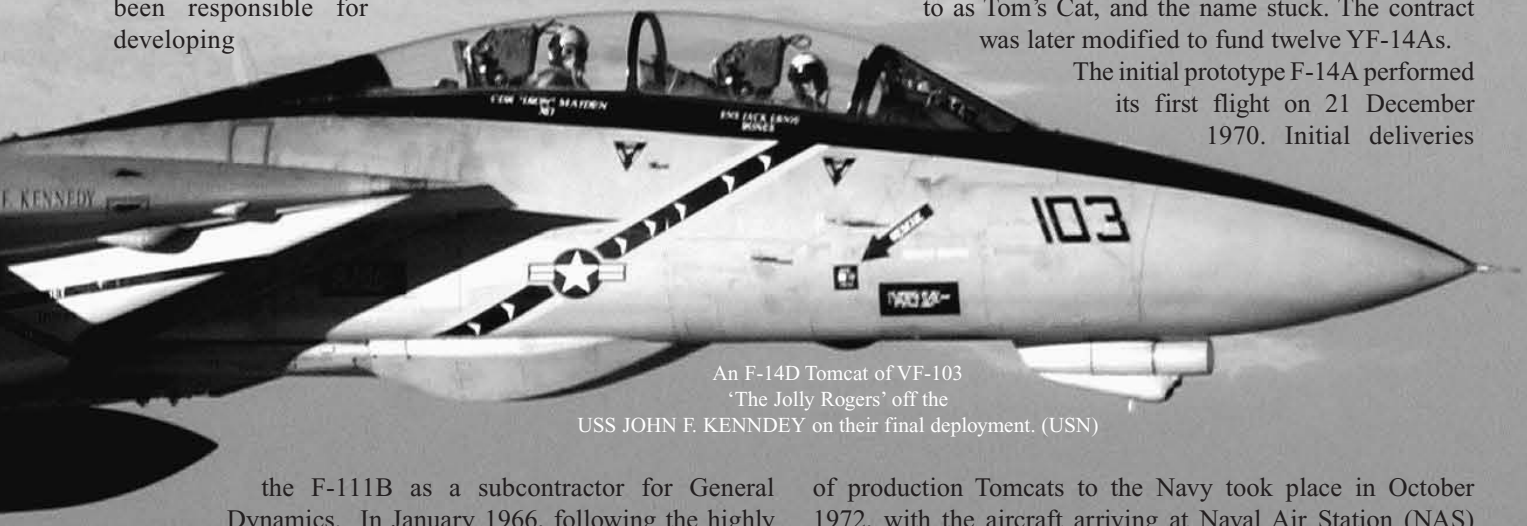
F-111B was highly unsatisfactory. Attempts were made to fix the problems, but it was impossible. Congress cut funds in May 1968, work was halted in July, and the program was formally axed in December, after the construction of a total of seven F-111B prototypes and evaluation aircraft.

The Grumman company had actually been responsible for developing the F-111B as a subcontractor for General Dynamics. In January 1966, following the highly negative US Navy report on the F-111B, at the Navy's request Grumman began work on a set of designs for a more effective carrier-based interceptor, with the company designation of G-303, derived from their F-111B work. Grumman submitted their finalist proposals to the Navy in October 1967.

In July 1968, when the F-111B was clearly dead, the US Navy began a new competition for a fleet defence interceptor under the VFX program. Grumman submitted the G-303 against proposals from North American, LTV, General Dynamics, and McDonnell Douglas. Grumman, which tended to have a leg up in any competition for the Navy as the company had been supplying excellent aircraft to the service for decades, won the award in January 1969. The project was assigned high priority. The Navy was worried about new Soviet threat aircraft like the MiG-25 'Foxbat', and the long delays in fielding an improved fighter that piled up from the cancelled Missileer and F-111B programs left the admirals very worried.

Navy officials inspected a mockup of the definitive G-303 concept in the spring of 1969. Although some of the earlier concepts had featured fixed wings, the mockup used swing-wings. An initial development contract for six prototype and evaluation YF-14A Tomcats, as the type was designated, was awarded to Grumman that same year. Incidentally, the name Tomcat was selected partly to pay tribute to Navy Admirals Thomas Connolly and Thomas Moorer. Connolly was such a strong supporter of the program that the aircraft was referred to as Tom's Cat, and the name stuck. The contract was later modified to fund twelve YF-14As.

The initial prototype F-14A performed its first flight on 21 December 1970. Initial deliveries of production Tomcats to the Navy took place in October 1972, with the aircraft arriving at Naval Air Station (NAS) Miramar in California. The Tomcat entered operational service with Navy fighter squadrons VF-1 and VF-2 on board the carrier USS ENTERPRISE in September 1974. The US Navy eventually acquired 478 F-14As, including the 12 development aircraft, with the type replacing the McDonnell Douglas F-4 Phantom and Vought F-8 Crusader in US Navy service.



An F-14D Tomcat of VF-103 'The Jolly Rogers' off the USS JOHN F. KENNDEY on their final deployment. (USN)

THE F-14A

The F-14A is a big aircraft, with tandem seating for a pilot in front and Radar Intercept Officer (RIO) in back both on Martin-Baker GRU-7A 'zero-zero (zero speed, zero altitude)' ejection seats. The cockpit layouts are specialized for the pilot and RIO, and have little duplication.

The variable-geometry wing scheme incorporates a number of advanced features. One is the fit of glove vanes, small triangular foreplanes mounted in the wing gloves that are automatically extended at high speeds as the main wings are swept back, compensating for any change in aircraft pitch caused by the change in wing geometry.

The wing sweep is controlled by a Mach sweep programmer that automatically moves the wings through the range of 20

degrees to 68 degrees sweep, as dictated by flight requirements. The pilot can also set the sweep manually, and can select a special 55-degree mode for ground attack. The wings can be set back 75 degrees to an over sweep position, overlapping the horizontal tailplane, for carrier-deck storage.

The F-14A follows in the Grumman tradition of building rugged aircraft. It is built primarily of aircraft aluminium alloy and titanium, with selective use of graphite-epoxy composite assemblies. The aircraft was initially powered by twin Pratt & Whitney (P&W) TF30-P-412 turbofans with 54.9 kN (5,600 kgp / 12,350 lbf) dry thrust and 93 kN (9,480 kgp / 20,900 lbf) afterburning thrust each. The TF30 was one of the items inherited from the F-111B.

The engines are fitted in separate housings underneath the fuselage. The major rationale for this configuration was that it ensured adequate airflow to the engines, which had been a major problem for the F-111. It also gives maintenance crews direct access to the engines and makes engine replacement easier, though it has a few drawbacks as well. Each engine has a wedge-style inlet with a variable ramp in the throat, and is canted slightly away from the fuselage. A single external tank with a capacity of 1,011 litres (267 US gallons) can be carried under each engine pod. A retractable in-flight refuelling probe is fitted to the right side of the nose.

The Tomcat's distinctive weapon is the big Hughes AIM-54 Phoenix AAM with a range of 185 kilometres (100 nautical miles) and a fully active radar seeker, allowing the missile to perform its terminal-phase attack on a target without requiring that the Tomcat to keep the target illuminated with radar. In principle, it gave the Tomcat the ability to destroy intruders at very long range. In principle, the Tomcat, which is the only aircraft to ever carry the Phoenix operationally, can carry six Phoenix missiles, with four carried in the fuselage tunnel between the engines and two on wing pylons.

However, the Phoenix, nicknamed the "Buffalo" because of its size, is so heavy that a Tomcat can't carry six of them if the aircraft is to land on a carrier. No such restriction exists if the Tomcat is operating off a land base. Another problem with carrying six Phoenix missiles is that the drag of the two extra missiles on the wing glove pylons cuts into aircraft performance and flight endurance.

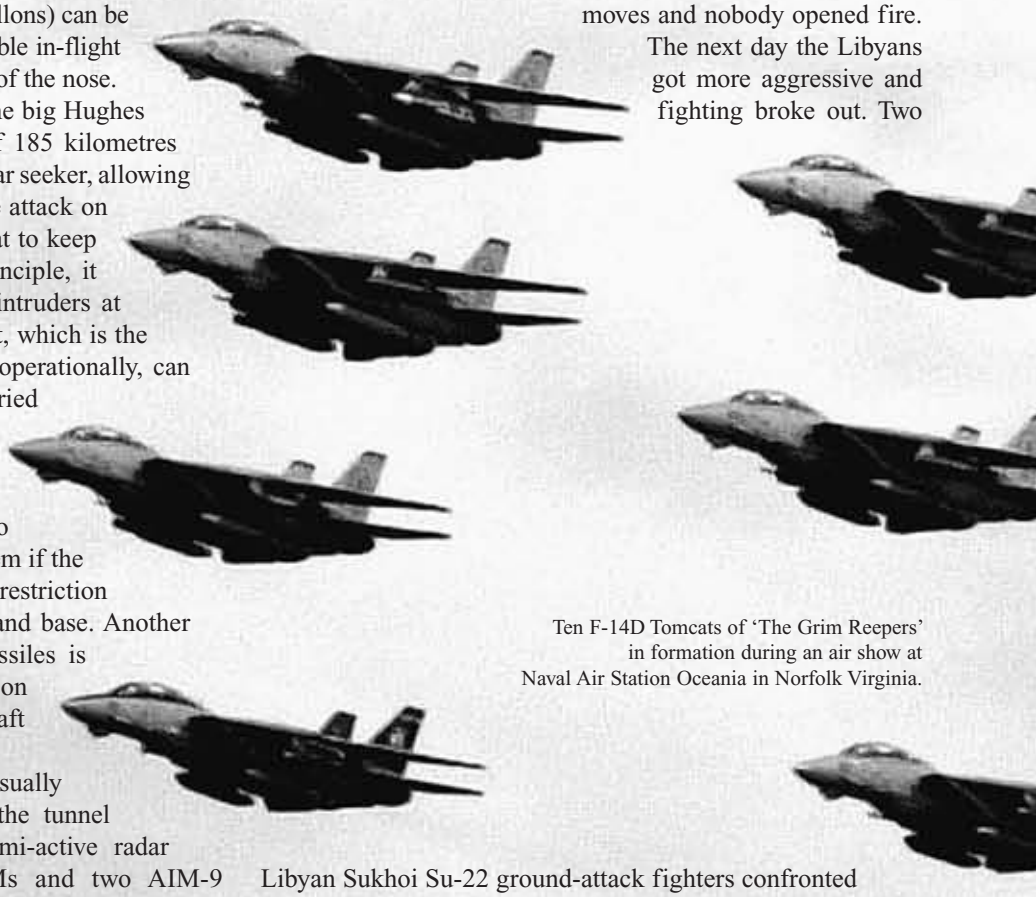
In practice, a full armament load usually consists of four Phoenix missiles on the tunnel stations, plus two AIM-7 Sparrow semi-active radar homing (SARH) medium-range AAMs and two AIM-9 Sidewinder heat seeking short-range AAMs, for a total of eight AAMs. A Sparrow and a Sidewinder are carried on a special dual rack mounted on each wing glove pylon, with a Sparrow on the bottom of the rack and a Sidewinder to the outside.

In the A model the Phoenix and Sparrow are controlled by a Hughes AN/AWG-9 radar and the AN/AWG-15 fire control computer. The AN/AWG-9 gives the Tomcat a wide-area air-surveillance capability, with a range of 160 kilometres (100 miles) or more. The radar can search while tracking 24 targets, and engage six targets simultaneously.

Early F-14As were fitted with a steerable AN/ALR-23 Infrared Search and Track (IRST) sensor under the nose that could be slaved to the radar or used independently. In the early 1980s, the IRST was replaced in Tomcat production with the Northrop AN/AXX-1 Television Camera Set (TCS), a steerable daylight video camera with a telephoto lens, and the TCS was retrofitted to the earlier F-14As. TCS allows a Tomcat to inspect a target at long range before engaging it, at least in daylight/clear weather conditions. The inability to determine if a target was a friend or a foe had been one of the limiting factors for use of beyond visual range (BVR) AAMs such as the Sparrow in Vietnam.

The Tomcat features a built-in General Electric (GE) M-61A1 six-barrelled Gatling-type 20mm cannon, with an ammunition store of 675 rounds. The cannon is fitted under the left side of the cockpit.

The F-14A saw its first combat in 1981 during confrontations between the US and Libya. Colonel Khaddafi had declared the Gulf of Sidra, bounded by Libya's coast in the Mediterranean, as Libyan waters, and in defiance in the summer of 1981 President Reagan ordered the US Navy to steam into the gulf and dare Khaddafi to do something about it. There was a confrontation between US Navy Tomcats and Libyan fighters on 18 August, but nobody made any wrong moves and nobody opened fire. The next day the Libyans got more aggressive and fighting broke out. Two



Ten F-14D Tomcats of 'The Grim Reepers' in formation during an air show at Naval Air Station Oceania in Norfolk Virginia.

Libyan Sukhoi Su-22 ground-attack fighters confronted two US Navy F-14As, piloted by Commander Henry "Hank" Kleeman and Lieutenant Larry "Music" Muczynski from the carrier USS NIMITZ. The Su-22s approached head-on, with the first firing an AAM that failed to track. Both Tomcats focused on the lead Su-22 as it was the most immediate threat, but when Muczynski reported that he had a target lock on the bandit Kleeman turned to get on the tail of the second Su-22, which was passing them.

Both F-14As fired AIM-9L Sidewinders and scored hits. Both Libyan pilots ejected, though only one parachute was seen to open. It hadn't been much of a contest.

The next action was much more successful, though it was mostly theatre as well. In October 1985, four Palestinian terrorists hijacked the Italian cruise liner *ACHILLE LAURO* in

An F-14D Tomcat about to 'trap' aboard one of the US Navy's Nimitz class aircraft carriers. (USN)

the Mediterranean, where they murdered an elderly American tourist. The terrorists managed to cut a deal with Egypt to take an Egyptair Boeing 737 airliner to Libya.

American signals intelligence was monitoring the whole affair, and seven Tomcats were scrambled from the carrier USS SARATOGA to intercept the airliner. They forced it to land at Sigonella, Italy, where the terrorists were arrested and tried by the Italians. It might not have been a massive blow to terrorism, but it was great action-movie stuff. It is little wonder in hindsight why Ronald Reagan was so popular in his time.

The US Navy performed yet another provocation exercise in the Gulf of Sidra in early 1989. Two Tomcats from the USS JOHN F. KENNEDY (JFK) were on combat patrol when they were confronted by two Libyan MiG-23 fighters. The Tomcat crews were given the authorization: "Warning yellow, weapons hold" – indicating they were recognized as being under threat ("warning yellow") and were free to prepare for and engage in combat ("weapons hold", as opposed to "weapons tight"). The fighters launched two Sparrows and a Sidewinder, with one Sparrow and the Sidewinder scoring kills. Both Libyan pilots ejected successfully, but were apparently lost at sea.

Tomcats flew air patrols again during the 1988-1989 Persian Gulf convoy operations, occasionally firing missiles at Iranian F-4 Phantoms but not scoring any kills. F-14s also flew during the 1991 Gulf War, performing air patrols to protect Navy ships, which as it turned out were never presented with any real threat. It appears that the only kill scored by F-14As during the conflict was of a Mil Mi-8 'Hip' helicopter, shot down by two Tomcats on 6 February 1991.

F-14B / F-14D

It is difficult to tell an F-14B from an F-14A. The F-14B has bigger exhaust nozzles, no wing glove vanes, a modified door near the gun port, and antennas for a new AN/ALR-67 Radar Warning Receiver (RWR) under the wing gloves. The new engines not only provided improved performance, for example allowing carrier takeoffs without afterburner, they were also more fuel-efficient, permitting longer loiter times or a greater radius of action, and could be operated without the same kind of babying demanded by the old TF30s.

The Navy also decided to obtain an F110-powered Tomcat with a substantially improved digital avionics suite, including an AN/APG-71 radar system; a modernized cockpit layout, featuring new display systems and compatible with night-vision goggles (NVGs); new Martin-Baker Mark 17 ejection seats; an AN/ALR-67 RWR; dual MIL-STD 1553B digital data buses; and both IRST and TCS sensors. The new variant was

Two F-14B Tomcats on a training sortie at Naval Air Station Oceania at Norfolk Virginia.

designated the F-14D Super Tomcat, with four conversions from F-14As as development prototypes, the first flying on 24 November 1987.

The AN/APG-71 is a considerable improvement on the powerful but elderly AN/AWG-9 radar. It was derived from the AN/APG-70 built for the McDonnell Douglas F-15E Strike Eagle, with about 60% commonality between the two radars, and provides improved search and tracking at slightly longer ranges than the AN/AWG-9, as well as improved resistance to countermeasures. The IRST and TCS sensors are fitted in a distinctive dual chin pod that provides a recognition item for the F-14D relative to the F-14A, at least when viewed from head-on where the pod's double-barrelled appearance is obvious.

A total of 37 F-14Ds were built, the first entering operational service in November 1990, along with 18 F-14D(R) upgrades from F-14As. The original intent had been to upgrade the entire Tomcat fleet to F-14D standards, but with the end of the Cold War the full upgrade program was judged too expensive. The F-14Ds were the last Tomcats built.

THE BOMBCAT 1992 - 2003

Despite the fact that 'strike' versions of the Tomcat hadn't materialised, the idea remained alive, with the concept that the existing fleet of F-14s could be assigned the job. The Navy had been experimenting with dropping bombs from Tomcats as far back as 1987, though weapons clearance went at a very slow pace. It wasn't until 1992 that the Tomcat was even cleared to carry iron bombs operationally.

Although the advanced strike Tomcat concepts had featured wing pylons to carry weapons, the standard Tomcat was restricted to carriage of four bombs on munitions adapters mounted on the Phoenix stores stations. It is possible to fit triple ejector racks (TERs) that can carry three bombs each, but this is apparently only done to carry practice bombs.

Even after clearing the Tomcat for bomb carriage, the US Navy still seemed half-hearted about the idea. Tomcats did perform a few strikes in Bosnia in 1995, but they had no means to designate targets for laser-guided bombs (LGBs) themselves and Hornets had to provide buddy designation for them. However, by this time the attack Tomcat concept was building up momentum, driven by the time gap between the phase out of the A-6 Intruder and the arrival of the Super Hornet. By 1994 Grumman and the US Navy were proposing ambitious plans for Tomcat upgrades to plug that gap, but Congress balked. The upgrades were priced in the billions, a bit much for an interim solution, and they would take too long to implement to meet the looming gap.

The solution finally devised was a limited cheap and quick upgrade, with fit of the Lockheed Martin 'Low Altitude Navigation & Targeting Infra-Red for Night' (LANTIRN) targeting pod system to the Tomcat, which would give the F-14 a forward-looking infrared (FLIR) camera for night operations and a laser target designator to direct LGBs. The upgraded Tomcats would also go through a service life extension program (SLEP) to keep their airframes airworthy and would be fitted with a set of modest improvements.

Although LANTIRN is traditionally a two-pod system, with an AN/AAQ-13 navigation pod with terrain-following radar and a wide-angle FLIR, along with an AN/AAQ-14 targeting pod with a steerable FLIR and a laser target designator, the decision was made to only use the targeting pod. This was apparently done for cost reasons, though the Tomcat's LANTIRN targeting pod did feature some improvements over its baseline configuration, most significantly a Global Positioning System / Inertial Navigation System (GPS/INS) capability that would allow a Tomcat to find its own location at any time. The pod is carried on the right wing glove pylon.

Fit of the AN/AAQ-14 pod didn't require any updates to the F-14's own system software, which would have substantially increased the time and expense of the upgrade. It did require that the Tomcat have the MIL-STD 1553B bus, fitted standard to the F-14D and available on updated F-14A/Bs. The RIO receives pod imagery on his display and guides LGBs using a new hand controller. Initially the hand controller replaced the RIO's recce pod control panel, meaning a Tomcat configured

for LANTIRN couldn't carry a recce pod, but eventually a workaround was developed that allowed a Tomcat to carry LANTIRN or recce pod as needed.

Initial flight of a LANTIRN-equipped Tomcat was on 21 March 1995 and the test program went smoothly. Official rollout of the first F-14 Precision Strike Fighter was on 14 June 1996. The 'Bombcat' had finally come of age and was on its first operational cruise by the end of the month, on the carrier USS ENTERPRISE. Lockheed Martin engineers were on board the carrier to provide fixes and make changes as required. The Bombcats flew sorties over Bosnia but did not see any combat.

Interestingly, Bombcat crews reported that the FLIR on board the LANTIRN pod was more effective in checking out distant targets than the old TCS system. The FLIR has 4x, 10x, and 20x magnification capabilities and can be steered 150 degrees off the aircraft centreline. Later on, when a datalink was fitted to the F-14, LANTIRN FLIR imagery could be relayed along and recce pod and TCS data to provide night reconnaissance imagery in real time.

The LANTIRN Bombcat made its combat debut in OPERATION DESERT FOX, air strikes conducted against Iraq in December 1998 after Iraqi dictator Saddam Hussein evicted UN arms inspectors. The Bombcats saw more combat in the NATO air campaign against Serbia over Kosovo in the spring of 1999, flying hundreds of sorties, and then in more strikes on Iraqi air-defence targets.

Tomcats also flew in the air-defence role during the Iraq strikes, and on 6 January 1999, one fired two Phoenix missiles at two Iraqi MiG-25s at extreme range. Both missiles missed. This was the first time the US Navy had ever fired the Phoenix in anger. Two more were fired at Iraqi fighters in September 1999, missing again.

These incidents leave the effectiveness of the Phoenix an open question. Apparently the Iraqi fighters were at extreme range and just trying to be a nuisance, and the missiles were mainly fired to suggest that the Iraqis get lost. However, the blank combat record of the Phoenix is consistent with the blank record of the Hughes Falcon series of AAMs in general. The AIM-120 AMRAAM, a Sparrow derivative with a full-active radar seeker, is a more modern and by the evidence a much more effective weapon than the Phoenix, though AMRAAM's range does not match that of the Phoenix. New ramjet-powered versions of AMRAAM are being considered that may outrange the Phoenix. Plans were made to modify the Tomcat for AMRAAM carriage but fell through.

In any case, by this time the Bombcat was receiving a new strike capability in the form of the GPS-aided GBU-31/32 Joint Direct Attack Munition (JDAM) guided glide bomb. Details of the implementation of JDAM on the Tomcat are a bit unclear and it is not apparent if the bombs can be loaded with GPS target coordinates in flight, or if the coordinates have to be preloaded before the mission. Tomcat LANTIRN pods were also improved to permit high-altitude operation up to 12,200 meters (40,000 feet), with the first updated LANTIRN 40K pod going into service in 2001.

Bombcats got a chance to use their new weaponry during OPERATION ENDURING FREEDOM, the American intervention in Afghanistan in the winter of 2001:2002. While details of the Afghan campaign remain unclear, it appears that Bombcats performed close-support strikes using LGBs and JDAMs, and also marked targets with LANTIRN for F/A-18 Hornets. It is plausible that F-14s also participated in the American invasion of Iraq in the spring of 2003, but details are not known at this time.

A 'Bombcat' trapping aboard. The Bombcat model is usually distinguishable from other variants by the LANTIRN pod under the starboard wing pylon.

Tomcat Tales

By F-14 Pilot David "Hound" Karonidis

An F-14 doing a high-speed low altitude banking pass along the deck edge of its aircraft carrier. The F-14 was a surprising manoeuvrable dog fighter being able to out dog fight the F-4 Phantom which gained a good reputation in the close in fighter mode against North Vietnamese MiG-15s,17, 19s and 21s.

An F-14A Tomcat firing a AIM-54 Phoenix AAM. In theory the Tomcat could carry six AIM-54 but the combined weight of these six missile meant she could not land back on a carrier. It was a case of use them or lose them. In practice the most carrier based Tomcats would carry was four AIM-54 plus two AIM-7 Sparrow and two AIM-9L Sidewinder.

After 30 plus years the F-14 Tomcat is being placed into retirement. Squadrons are disbanding and in some cases reforming with the Tomcat's successor, the F/A-18E/F Super Hornet. The good news is the cat will still be in the air for a couple of years but by 2006-7 there will no longer be VF squadrons in the US Navy.

The F-14 has been a great success for the US Navy, not only as a fighter but also in the last 10 years as the only long range, heavy strike aircraft deployed to the US fleet. All three versions (A, B and D) have been upgraded with quickstrike software, this allows the aircraft the carry the LANTIRN navigation/targeting pod and Paveway III 2,000lb LGB's (Laser Guided Bombs).

Kosovo was where the deep strike capabilities of the upgrade F-14 were first proven. VF-41 'The Black Aces' refined and proved the precision strike power of the F-14. They worked hard on close air support (CAS) and pioneered the tactics of Forward Air Controller-Air (FAC-A) working with the airwing's F/A18C's and USAF F-16's to get firepower on Serbia Army units. On one last minute mission a single tomcat put a LGB into a road tunnel to stop a Serb unit, only to return a few days later to rehit the same target to stop Serb bulldozers trying to clear the blockage.

'Black Aces' would find hidden tanks or truck staging posts, mark the target with their own bomb then call

A sight soon to be relegated to the history books. Six F-14D Tomcats in formation during an air show at Naval Air Station Oceania in Norfolk Virginia.

An F-14D conducting carriage and drop tests of 2,000lb LGB. The addition of the LGB to the Tomcat's weaponry gave the US Navy a capability it lost when the A-6 Intruder was retired from service.

No. Not a very low flying Tomcat but a Tomcat being towed to take up its new role of 'gate sentry'. With the demise of the Tomcat many are now appearing, sadly, as static displays at the entrance to many US Navy air bases.

for support from any strike aircraft, 'lasering' the target for precision attacks by other aircraft.

But time was against the Tomcat, VF-41 would trade to the F model Super Hornet on their return to homeport. VF-154 the 'Black Knights' of CVW5, the only forward deployed F-14 squadron, flying the oldest A models, returned to Oceania, Virginia, to convert to the Super Hornet, replaced with F model flying VFA-102 Diamond Backs.

For the VF squadrons retiring the Grumman feline and taking up Super Hornets and becoming VFA's it is a slow but steady process. Soon the only flying Tomcats will be a small number that will work for the USNFWS (USN Fighter Weapons School) 'Top Gun' but they will have a short lifetime there.

Much will be and has been written on the F-14, so it is time for a few day to day stories to come to the fore. Not only are the flight crews a source of interesting tales but the hard working maintenance crews. Such as the time during a Mediterranean cruise, when night launches are at best hectic any problem seams to multiply by a factor of ten. A 'Yellow Shirt' flight deck crewman grabbed a young plane captain, informing him that an aircraft (third in line for the cat) needed trouble shooting.

Running up to the plane the pilot signalled that that his cockpit video screen was "down", now there was only a minute or two before he would taxing up to catapult 2 for launch. The "tweak" or electronics trouble-shooter was near the fantail and no time to get him. The 'Yellow Shirts' were about to redirect the plane, with pilot and RIO (Radar Intercept Officer) looking very upset, the young plane captain changed his mind and signalled the pilot to give the instrument panel a good thump. The pilot got it just right. The plane captain didn't need to see the thumbs up as the pilot's helmet, face and canopy all lit up with the green reflection as soon as the video display worked.

The first appearance of the F-14 on the silver screen was in the film 'The Final Countdown'. Carrier Air Wing 8's VF-84 "The Jolly Rogers" supplied the stars. As usual the people from Hollywood knew better and wanted to place cameras on a missile station to film a dogfight with two Japanese Zero's. A wiser and knowledgeable Chief Petty Officer tried to explain that the way the film crews were mounting the camera was wrong, but they knew better. Yes, aircraft returned from filming but the camera did not. The chief was consulted from that day on.

It must be remembered that each Tomcat built had its own personality, some made strange noises, some had electrical problems, some hydraulic and some came with demons that no amount of time and effort could find a fix. One aircraft was the dubbed "supreme hanger queen", you name it, and it was a problem. The aircraft was dispatched to the factory at Long Beach for a major rebuild (inspect and repair) to be returned to the fleet as a new aircraft. Sadly not to be, on a transcontinental flight some where near St Louis, in stormy weather, system after system failed. Radar, auto pilot, lighting, computers systems all decided to act up. Finally, a lightning strike settled things and the crew declared an emergency to St Louis field. Only to make a perfect landing but to blow both main tyres and aquaplane off the very end of the runway. Back to the factory. This airframe was lost at sea a year later with both crew surviving.

For those who followed the Tomcat career and collected the squadron/cruise patches, made famous in the film 'Top Gun', the stand down has created some interesting comments. Firstly the famous nickname of "Rhino" has been passed on from the F-4 to the new F/A18E and F. Transition patches have appeared for squadrons changing aircraft. Last cruise patches and farewell patches have appeared. Very collectable but a sad sight. So what will be missing from the fleet? A long range interceptor/fighter/strike aircraft that could track and engage multiple targets at ranges of 100nm. The loss of the AIM-54 Phoenix missile system and the only beyond visual range anti-cruise missile. The Super Hornet is working out very well with its baptism of fire over Iraq but the aircraft are not up to full specs as yet, it appears funding is as much a problem for the 'Rhino' as it is for the Tomcat. For those who would like to read more about a final cruise of a Tomcat squadron under fire the 2003 book "Black Aces High" by Robert Wilcox is a must. This shows the F-14 at its best as the US Navy's best long range strike fighter doing what she does best over Bosnia during the Serbia conflict.

At this time the only F-14 squadrons still flying are VF-31 Tomcatters, VF-213 Black Lions, VF-143 The World Famous Pukin Dogs, VF-11 Red Rippers. VF-103 Jolly Rogers and a small number at the USNFWS. All these squadrons are on deployment and on their return will transfer to F/A 18E or F.

A long list of famous or infamous aviators have been linked to the Tomcat, they include CDR Dave "hey Joe" Parsons, CDR Tom "tumor" Twomey, RADM Jay "Spook" Yakely, LT Larry "Music" Muscyzinski, the late, great CDR Henry "Hank" Kleenman, RADM Paul "Gator" Gillcrist, top guns Dale "Snort" Snodgrass and Joe "Hoser" Satrapa and ADM Tom Connelly, who without his courage the F-14 would not have come into being.

By the end of 2005 the F-14 will be retired, Carrier Air Wings will in some cases comprise of all Hornet squadrons (including EA-18 Growlers) naval aviation goes on but there will be many aviators who will sadly miss the best that Grumman produced, The F-14 Tomcat.

An F-14D Tomcat of VF-103 'The Jolly Rogers' off the USS JOHN F. KENNDEY on their final deployment. (USN)

Flash Traffic

AWD bids announced

Defence Minister Robert Hill has announced that Defence had received three proposals from Australian industry for the role of shipbuilder in the $4.5 to $6 billion Air Warfare Destroyer project.

Proposals were received from ASC Shipbuilding, Northrop Grumman Ship Systems and Tenix Defence.

Defence is currently evaluating the three ship designer proposals from Blohm + Voss, Gibbs & Cox and Izar, which closed on 24 November 2004. The Department is also evaluating responses from BAE Systems, Raytheon Australia and Saab Systems for the Combat System-System Engineer, which closed on 10 December 2004.

The construction of the Air Warfare Destroyers will be one of the most significant shipbuilding projects undertaken in Australia to date, and will provide an enormous challenge for Australian industry.

The AWDs will have the US sourced Aegis air warfare system as the core of their combat system, and will provide sustained maritime area air defence for deployed forces. The ship will be highly interoperable with the US and other coalition partners.

The proposals will now be the subject of rigorous and detailed analysis. Selection of the shipbuilder will be based on a number of key criteria including:

- Commitment to the principles of a long-term risk sharing arrangement with the Commonwealth and other industry partners for the construction of the AWDs;
- A cost, overhead and pricing structure that will enable the cost effective delivery of the AWDs, including the ability to build designs considering 'whole of life' costs;
- A sound record of past performance in building naval vessels;
- Commercial viability and financial backing;
- Access to the skilled workforce required to produce ships to the Commonwealth's requirements;
- Willingness to provide open financial accounting data – including visibility through to the sub-contractor level – to the Commonwealth;
- Capacity to provide the Commonwealth with transparency and contractual influence over major sub-contractors; and
- Capacity to access sensitive technology required for the AWD project.

Companies bidding for the AWDs were required to include Australian skills and training programs in their tenders, with Defence to fund companies for extra skills generation and training benefits in the programs.

Tender awarded for HMAS SIRIUS

Tenix Defence Pty Ltd has been selected as the preferred tender to upgrade and refit the recently acquired commercial tanker which will replace the Royal Australian Navy's ageing auxiliary oiler, HMAS WESTRALIA.

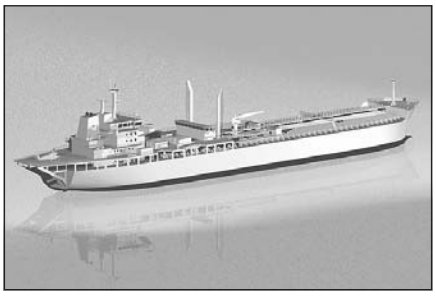
The purpose of the conversion will be to modify the vessel so that it has the latest technology and equipment capable of refuelling Navy vessels, including the Anzac, FFGs and the new Air Warfare Destroyers that will enter into service from 2013.

The contract, valued at around $60 million, is for the design, initial logistic support and modification of the merchant tanker *DELOS*, with the modified ship to enter service in June 2006.

Defence Minister Senator Hill said the modifications to the ship will be carried out at the Common User Facility at Henderson, south of Fremantle, in Western Australia. It will have an Australian Industry Involvement component of 95 percent.

Some of the specific modifications will include:

- The installation of a replenishment at sea rig;
- Various accommodation modifications for Navy personnel including heating, ventilation, air-conditioning, freshwater and sewerage.
- A number of other additions include a helicopter landing pad, Rigid Hulled Inflatable Boats and a related crane, and Navy life saving and damage control works.



A computer generated image of what the completed HMAS SIRIUS will look like after her conversion. (RAN)

The *DELOS* is currently chartered to Teekay Shipping Singapore under a commercial arrangement. Following contract negotiations it will be delivered to Western Australia.

Once complete, the crew of the ship will be transferred from HMAS WESTRALIA, ensuring a seamless transfer of operational capability to the Navy. The *DELOS* will be commissioned as HMAS SIRIUS on completion of the project.

V-22 to begin operational evaluation

A V-22 Osprey of the USMC lifts off the deck of a USN LHD. (USN)

The Operational Evaluation (OPEVAL) testing program for the Bell Boeing V-22 Osprey has now been approved. On February 24, Tom Laux, the US Military's Program Executive Officer for Air Anti-Submarine Warfare, Assault, and Special Mission Programs, certified that the V-22 Osprey aircraft is ready for operational test and evaluation.

"This is great news signifying a crucial step forward in reaching our goal of getting this tremendous aircraft to our customers," declared Robert Kenney, Bell Helicopter vice president and director of the V-22 Joint Program Office.

The actual start date for OPEVAL will be determined by Marine Corps Col. Glenn Walters, commanding officer of VMX-22, the squadron based at MCAS New River, NC, which has the mission of performing the V-22 OPEVAL.

Two Ospreys were delivered in February from Bell Helicopters Amarillo, Texas, manufacturing facility bringing the calendar year delivery total to three aircraft so far. The V-22 program calls for a total of 458 aircraft to be delivered to US Government customers. February deliveries included the CV-22 Additional Test Asset (ATA) to Edwards AFB, Calif., and Osprey No. 48 was delivered to VMX-22 at MCAS New River, NC.

ADI to supply MSI Gun systems to NZ

ADI Limited (Australia) has been awarded the contract to supply the main gun systems for the New Zealand Ministry of Defence's Project Protector program by the lead contractor, Tenix Defence Pty Ltd.

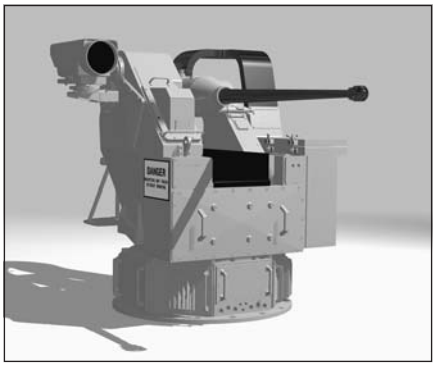
The systems are the MSI DS25M designed by MSI-Defence Systems, UK. This modern modular design enables a smaller calibre gun system to be configured in virtually any format to meet the full spectrum of potential naval configurations, from manned, with basic sighting, to full autonomous control by a ship's systems or control at a remote station.

The systems for the Protector vessels will incorporate the ATK 25mm M242 Bushmaster cannon, common to the NZ Army's light armoured vehicles, giving the NZ navy commonality of ammunition and cannon training and support.

"ADI has chosen to continue collaborating with MSI to offer new supply and through life support for the MSI modular gun systems. Previously we produced six 30mm MSI gun systems for the Royal Australian Navy's Huon Class minehunters," said Mr Lucio Di Bartolomeo, ADI's managing director.

"ADI considers the MSI modular gun system as the best in the market. It is extremely well designed, very robust, while maintaining a lightweight footprint.

"Its marinisation is excellent. This is critical in achieving reliability and low through life costs. This has resulted in a system capable of withstanding the pounding from heavy seas and green water exposure while then continuing to deliver the best reliability and availability of the systems currently available in the market."



The MSI DS25M designed by MSI-Defence Systems, UK. The RNZN's Protector vessels will incorporate the ATK 25mm M-242 Bushmaster cannon, common to the NZ Army's light armoured vehicles, on the MSI mount. (ADI)

MSI has well over a hundred units in service with a range of navies.

Tenix was awarded the Protector Project in July 2004 after an extensive competition involving over 25 shipbuilders worldwide. The Protector fleet will comprise one multi-role vessel, two offshore patrol vessels and four inshore patrol vessels to be progressively delivered in 2006 and 2007. The MSI gun systems will be installed on the MRV and the two offshore patrol vessels. Tenix tendered the MSI gun in its baseline offer to the MoD and has been negotiating with ADI to conclude these contractual arrangements now in place.

First steel cut for new NZ fleet

Tenix Defence began cutting steel for the NZ$500m Project Protector naval shipbuilding contract at its Williamstown, Melbourne shipyard.

NZ Secretary of Defence, Mr Graham Fortune, switched on computerised cutting equipment to begin manufacturing plates for two 85m, 1500 tonne Offshore Patrol Vessels for the Royal New Zealand Navy.

The ships are being constructed as part of Royal New Zealand Navy seven-ship order, which includes four 55m Inshore Patrol Vessels and a 131m Multi-Role Vessel, as well as the Offshore Patrol Vessels.

The Offshore Patrol Vessel design for the RNZN's Protector Project. (Tenix)

Tenix Defence CEO Robert Salteri said the ceremony at Williamstown underlined the skills and capabilities developed by Tenix Defence and its suppliers and subcontractors in Australia and New Zealand.

The seven ships are being built at three locations:

The Multi-Role Vessel is being built in the Netherlands, with final fit-out at Williamstown.

The Offshore Patrol Vessels will utilise the modular construction method used with the ANZAC frigates. Modules will be built at Williamstown and the Tenix facility at Whangarei in New Zealand, and the ships will be consolidated and launched at Williamstown.

The Inshore Patrol Vessels will be constructed entirely at Whangarei.

MINSK World bankrupt

The scrapyard is beckoning for the mothballed Soviet-era aircraft carrier MINSK, whose previous date with the breaker's yard was put off by a detour to form part of a Shenzhen theme park in China.

'MINSK Aircraft Carrier World', one of the hottest tourist attractions in Shenzhen, is seeking a 'white knight" to rescue it from bankruptcy after the financial shipwreck of its parent, D'Long International Strategic Investment.

Shenzhen government officials have been actively enlisted in the hunt for new investors, foreign or domestic, hoping the MINSK will cheat death again to occupy a place of honour in the entertainment and tourism hub they plan to develop along the eastern shore of the Special Economic Zone.

MINSK World is reported to have defaulted on a 200 million Yuan (HK$187.9 million) loan from China Construction Bank (CCB), one of the big four state-owned lenders. Since the Guangzhou Maritime Court froze its assets, it has been under the trusteeship of China Huarong Asset Management.

The chance to clamber over one of the world's most formidable warships has attracted more than five million visitors and generated 450 million Yuan in revenue since the theme park opened in September 2000.

The public gangway entrance to the once proud 42,000-tonne, 275-metre-long flagship of the former Soviet Union's Pacific Fleet. Now a theme park in China.

The aft end of the forward missile battery of the Kiev class carrier MINSK is now a Pepsi stand.

MINSK World ranks among Shenzhen's top four attractions, averaging 2,000 visitors on weekdays and as many as 5,000 per day at the weekend. The recent National Day holiday was a bonanza, with 110,000 visitors pushing through the turnstiles. The admission fee is 110 Yuan.

The 42,000-tonne, 275-metre-long carrier once carried 42 aircraft as the flagship of the former Soviet Union's Pacific Fleet. After the Soviet Union dissolved, Russia was unable to manage the upkeep, and the carrier was decommissioned in 1994. In 1998, an unidentified Chinese businessman purchased it after its weaponry was stripped off in South Korea.

It then passed to the theme park's owner, D'Long Group, which is based in the northwest Xinjiang Uygur Autonomous Region. Brothers Tang Wanxin and Tang Wanli, who set up the company, were seen as paragons of the new entrepreneur class until early this year, when their complex funding mechanism based on dubious stock transactions ground to a halt.

Picnic tables now stand where once stood Soviet Yak-38 'Forger' VSTOL fighters. In the background are some of the aircraft on display at MINSK World. None of which actually operated from the carrier.

Russian Bombers to range out with missile tests

Russia's long-range bombers will conduct several missile test launches in various parts of the world in 2005.

"The testing area will be considerably enlarged," said Igor Khvorov, commander of the 37th Strategic Air Army.

Test launches will be carried out during joint exercises with the Russian Navy in the Atlantic and Pacific Oceans, and their number will be much greater than in 2004, he said.

In the nuclear triad, long-range aviation is the best means of implementing the policy of deterrence, Khvorov said. He added that during flights to various regions, long-range aircraft "gather a great deal of information."

Rolls-Royce delivers world's most powerful marine gas turbine

Rolls-Royce, under contract to Northrop Grumman, the prime contractor for the USN DD(X) program, has delivered its first MT30 marine gas turbine generator set to the US Navy.

The MT30, the world's most powerful marine generator set on the market today, was shipped to the US Navy's test facility in Philadelphia to power test runs for the DD(X) destroyer, a leading-edge program key to future capabilities.

The MT30 will drive the DD(X) Integrated Power System Engineering Development Model, which will provide risk mitigation for the main propulsion and shipboard systems. The shipment marks the first delivery of a large Rolls-Royce gas turbine for the US Navy.

"We are delighted to deliver this transformational technology to the US Navy," said Patrick J. Marolda, president of the Rolls-Royce naval marine business in North America. "The MT30 incorporates leading-edge, proven aero engine technology into a unique marine power system."

The 36 megawatt (MW) MT30 has 80 percent commonality with the Trent 800 aero engine which has won a market-leading 44 percent of the Boeing 777 program and achieved more than six million flying hours since entering service in 1996.

Final assembly of the MT30 took place at DRS Power Technologies, Inc. in Fitchburg, MA. The generator set left Fitchburg and travelled by truck to the port of Lynn, MA where it was loaded on a barge for the trip to the test facility in Philadelphia.

SM-3 intercepts ballistic missile

The Aegis Ballistic Missile Defense (BMD) Weapon System and Standard Missile-3 (SM-3) destroyed a ballistic missile outside the earth's atmosphere during an Aegis BMD Program flight test over the Pacific Ocean.

The Feb. 24 mission, the fifth successful intercept for SM-3, was the first firing of the Aegis BMD

'Emergency Deployment' capability using operational versions of the SM-3 Block I missile and Aegis BMD Weapon System. This was also the first test to exercise SM-3's third stage rocket motor (TSRM) single-pulse mode. The TSRM has two pulses, which can be ignited independently, providing expansion of the ballistic missile engagement battlespace.

The SM-3 was launched from the Aegis BMD cruiser USS LAKE ERIE (CG-70) and hit a target missile that had been launched from the US Navy's Pacific Missile Range Facility on Kauai, Hawaii.

Japan has made decision to procure Aegis BMD with SM-3 for its Kongo-class ships.

An SM-3 leaves the Mk-41 VLS of the USS LAKE ERIE during what turned out to be another successful anti-ballistic missile test shoot. (USN)

US demands return of USS Pueblo

As diplomatic efforts to end a nuclear standoff between Washington and Pyongyang make little headway, a resolution has been introduced in the US Senate demanding that North Korea return an American intelligence ship seized by the hardline communist state 37 years ago.

The attack on the USS PUEBLO by North Korean naval vessels and MiG jets on January 23, 1968 left one American dead and several more wounded while 82 surviving crew members were captured, held prisoner and tortured for a year.

The US Senate resolution demands the return of the vessel, believed still in North Korean hands.

"North Korea's inhumane treatment of our sailors, and the refusal of Pyongyang to return this vessel should not be forgotten," said Senator Wayne Allard, who filed the resolution in February after the Stalinist State stunned the world by publicly boasting about its nuclear weapons arsenal.

The Republican Senator from Colorado said although it had been more than three decades since the "disgraceful episode" occurred, "the United States government should demand the return of the USS PUEBLO to the US Navy without further delay."

Washington has been quite reluctant to demand its return because of the embarrassment caused by the incident. It had to apologise to North Korea for the spying mission before receiving the surviving crew.

The US Navy had publicly termed the mission a research ship conducting oceanographic studies but North Korean officials shared the secrets they unearthed from the vessel, including codes and cipher machines that enabled the Soviets to decipher many of the restricted American documents, according to reports.

It was the first US Navy ship to be hijacked on the high seas by a foreign military force in over 150 years.

Senator Allard said he would press for passage of his resolution during the current session of the Congress and work with the veterans of the USS PUEBLO and their respective groups to "take positive steps" towards getting the vessel back.

The ship was named after the city of Pueblo in the senator's constituency, where some residents plan to convert it into a "theme park" on its return.

Fred Carriere, executive director of The Korea Society and an experienced Korea hand, said he visited the ship last year during a trip to Pyongyang with the society's chairman and ex-ambassador to South Korea Donald Gregg.

The USS PUEBLO as she stands today in Pyongyang's Tedong River. The North Korean's regard her as one of their most sacred trophies.

"It was docked in the Tedong River and is still impressive and seaworthy," he said. "From the Korean point of view it is an educational exhibit and one of the most sacred trophies aimed at making the point of history about American invasions of Korea," he said.

Carriere said the ship was docked at the same spot where the Koreans sank a US merchant ship called *GENERAL SHERMAN,* among the first American vessels that sailed into Pyongyang in the 1860's in an apparent bid to 'open up' the Korean peninsula to the outside world.

Taiwanese Navy prepares for first world voyage

Taiwan's navy plans to make its first round-the-world voyage this year, said a Taiwanese newspaper, in what would be a display of long-range sea power sure to rile rival China.

Three ships would sail around the world in 101 days, from March to June, docking in seven countries that recognise Taiwan but also refuelling in countries without formal diplomatic ties with Taipei, the *China Times* said.

Taiwan's Defence ministry said the navy regularly made overseas excursions, but it declined to give details.

"Every year we make long-distance training trips, and the countries visited are principally diplomatic allies," said Defence Ministry spokesman Liou Chih-chien.

"But for now, the routes and countries to be visited haven't been decided, and we don't publicise them before they set off for security consideration," he said.

The *China Times* said the ships would set off in mid-March and sail through Southeast Asia, the Indian Ocean, around South Africa into the Atlantic Ocean and then through the Caribbean and the Panama Canal.

They would then cross the Pacific Ocean and arrive back in Taiwan on June 19.

The ships – a French-made Lafayette frigate, a Cheng Kung Perry-class frigate and a support vessel – will stop in Senegal, Gambia, St. Vincent, Panama, the Marshall Islands, Kiribati and Palau, the newspaper said. It did not identify its sources.

The voyage may coincide with a visit by President Chen Shui-bian's to Pacific allies in May and the Taiwan leader could stay on board one of the ships, the newspaper said.

A Chinese navy destroyer and supply ship made the first cruise around the world by a Chinese naval flotilla in 2002.

Derby AAMs for Indian Navy?

India and Israel are expected to sign a US$25 million deal for 20 air-air Derby missiles for the Indian Navy.

The deal is for beyond visual range (BVR) air-to-air Derby missiles.

According to senior Defence ministry sources, the deal will also include six practice missiles. The missiles are designated for the Indian Navy's Sea Harriers, which are on board INS VIRAAT aircraft carrier.

India has been conducting a worldwide search for BVR missiles for its Fleet Air Arm since 2000. The contract for arming its Sea Harrier jets was opened in 2003, sources added.

Once the agreement is finalised, the Israeli company will be stationing its specialists in India to train the naval officers in maintenance and operation of the missiles. Officials said that the company will also supply racks and trailers for transferring and installing the missiles.

Delivery of the missiles will start 30 months after the contract is signed, and be completed a year after that, sources said. These missiles have a maximum range of 20 km, a flying speed of Mach 1.2, and can lock in on the target even before being launched, or shortly after the launch.

An Israeli Derby BVR AAM on the outboard wing pylon (white nose cone closest to camera) of an F-16 fighter. The addition of Derby to the Indian Sea Harrier fleet will give them a much greater air-air capability against modern air forces.

Sources said that Indian Air Force (IAF) also needs next-generation BVR missiles for upgrading its Mirage 2000H and Sukhoi Su-30 MKI.

The need for new missiles was revealed in early 2003, when the IAF's weapon systems were unable to cope with those of the French during a joint Indo-French military exercise.

Indian Navy purchase MiG-29K

A contract for the purchase of 16 MiG-29K aircraft from Russian Federation for the Indian Navy was signed on Jan 20, 2004. The value of the contract is US$740 million. The delivery of the aircraft will commence from June 2007.

A MiG-29K. The Indian airforce is already a user of the MiG-29 thus enabling the Indian Navy to enjoy a level of cost efficiency due to commonality.

New Corvettes for Venezuela

Venezuela will buy four corvettes from the Izar Shipyard in a contract valued between 600 & 800 million EUROs. The corvettes are believed to have the following specifications:

Length overall 102.0 m, Beam 14.0 m, Full load displacement 2,600 tonnes, Draught 3.75 m, Maximum speed + 27kts, Cruise speed 15kts, Cruising speed range 4000nm, 30 days supply, 62 crew, Helicopter staff 8 and margin for 10 more crew.

This contract was closed during a discreet visit by Spanish Minister of Defense Jose Bono made on 25 January to Caracas.

In addition to the corvette order, six C-295 cargo planes made by the Spanish branch of European partnership EADS were also ordered. This second contract is valued at 150 million EUROs.

Daewoo to build four warships for Indonesia

Daewoo International Corp, a major Korean trading company, recently announced it has signed a US$150-million contract to provide four warships to the Indonesian navy in what is viewed as a major step in boosting its presence in the naval technology business in Southeast Asian countries.

The four warships, three common landing platform docks (LPDs) and a command ship, will be exported to Indonesia from January for use by its navy, the firm said.

The LPD is designed to transport troops into a war zone by sea using landing craft. It embarks, transports and lands soldiers and landing craft and can also be used for landings by helicopters.

Daewoo International said in a statement that the contract was a result of the know-how and capabilities it and its partners have built up in the military ship business. South Korea's Dae Sun Shipbuilding & Engineering has manufactured two of the LPDs and will give technological support to Indonesian firms for the building of the remaining two, Daewoo said.

LPDs are emerging as key military items for Southeast Asian countries for enhancing naval defence capabilities, Daewoo International said, adding it expects 'mega' deals from other nations in the coming months.

Daewoo International has been playing a bridging role between South Korean shipbuilding firms and the Indonesian navy for exports of naval technology. The firm signed a contract worth $50 million in 2000 to provide a multi-purpose hospital ship and tugboats to the Indonesian navy. In 2003 it won a $60 million Indonesian military project to enhance submarine facilities and naval warfare capabilities.

USS SAN FRANCISCO Skipper relieved of command

The commander of US Seventh Fleet, Vice Adm. Jonathan W. Greenert, relieved Cdr Kevin Mooney of his command of USS SAN FRANCISCO (SSN-711) on Feb. 12. The decision to relieve

Cdr Mooney was made following non-judicial punishment (NJP) proceedings held in Yokosuka, Japan. Additionally, as a result of the NJP, Mooney received a Letter of Reprimand.

Following the submarine striking an underwater seamount Jan. 8, Greenert reassigned Mooney to the staff of Commander, Submarine Squadron 15, based in Guam. During the conduct of the investigation into this incident, it became clear to Greenert that several critical navigational and voyage planning procedures were not being implemented aboard SAN FRANCISCO. By not ensuring these standard procedures were followed, Mooney hazarded his vessel.

One Sailor died and several were injured as a result of the grounding during operations in the Western Pacific Ocean. Of 137 on board, 98 Sailors experienced some injury and 23 were injured seriously enough that they were unable to stand duty during the sub's transit back to Guam.

Cdr. Andrew Hale, Deputy Commander, Submarine Squadron 15, has assumed the duties as commanding officer of SAN FRANCISCO.

The smashed bow of the SSN USS SAN FRANCISCO. (USN)

TS CANNING wins Navy League of Australia Efficiency Trophy

The Navy League of Australia Efficiency Trophy award has been won be TS CANNING with the presentation of the trophy by the CN Vice Admiral Chris Ritchie AO RAN to TS Canning.

In 1984 four years after TS Canning was commissioned, the Unit was granted the Freedom of Entry of the City of Canning, won the State Colours, the Vickridge Trophy, and the Navy League of Australia Efficiency Trophy, and numerous other awards in the following years.

In 2003 the Unit won the State Colours, and was runner up for the Navy League Trophy.

2004 was a very successful year for the Unit having won the State colours and the Navy League of Australia Efficiency Trophy.

It is the dedication of the staff, cadets and especially the continuing effort and support of the parent's committee that make all this happen.

Victor III dismantled under Japanese project

The first nuclear powered submarine of the Victor-III class based in the Russian Far East has been dismantled.

The retired submarine was scrapped and its spent nuclear fuel was unloaded under the framework of the Russian-Japanese project 'Star of Hope' at the navy shipyard Zvezda in Bolshoy Kamen settlement. The empty reactor compartment was shipped to the site of the DalRAO Company. The spent nuclear fuel was delivered to the Mayak reprocessing plant, and the scrapped metal was sold.

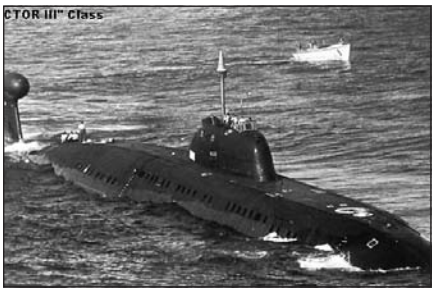
Last year Japan signed a co-operation agreement with Russia and pledged about US$180m for nuclear weapon dismantling works.

The 'Star of Hope' project stipulates dismantling of one nuclear submarine. According to Kiselev, the next project for scrapping five submarines is under consideration now. 46 retired nuclear submarines are waiting for dismantling at the Russian Far East.

In 2004 Russia disposed of 17 nuclear-powered submarines, according to the head of the Federal Atomic Energy Agency Alexander Rumyantsev.

"Twelve railroad shipments of spent nuclear fuel from reactors of the disposed submarines were made to the Mayak plant," he said.

Zvezda and Zvezdochka plants processed 874 cubic meters of liquid radioactive waste and 1,588 tonnes of solid radioactive waste in northwest Russia. The processed waste was put in temporary casing.



A former Soviet Victor-III SSN on the surface. The Victor-III were reported to be as good as the first batch of US Los Angeles class SSNs.

US Navy to christen KIDD

The US Navy has christened the newest Arleigh Burke class guided-missile destroyer KIDD, on Saturday, Jan. 22, 2005, at Northrop Grumman Ship Systems Ingalls Operations in Pascagoula, Miss.

The ship honours Medal of Honor recipient Rear Adm. Isaac Campbell Kidd. He was born in Cleveland, Ohio, on March 26, 1884, and graduated from the U.S. Naval Academy in 1906. On Dec. 7, 1941, Kidd was commander of Battleship Division One and the senior officer present afloat during the Japanese attack on Pearl Harbor. From the bridge of his flagship, the USS ARIZONA, Kidd directed the counterattack against enemy aircraft until the magazine of ARIZONA was exploded by enemy ordnance, eventually sinking the ship, and a direct hit to the bridge took his life.

Two previous U.S. Navy destroyers have been named in honour of Kidd. The first ship was a Fletcher-class destroyer that was in service from 1943-1974. It is now a floating veterans memorial and museum in Baton Rouge, La. The second, a Kidd-class destroyer was also built at Northrop Grumman Ship Systems. It served from 1981-1998 and was then sold to Taiwan.

KIDD is the 50th ship in the Arleigh Burke class of guided-missile destroyers.

Singapore to acquire Seahawk

Six new Sikorsky S-70B naval helicopters will join the Republic of Singapore Navy's (RSN) operation in the next few years, the Ministry of Defence (MINDEF) announced in a statement on recently.

Equipped with advanced anti-surface and anti-submarine warfare sensors and weapons, the helicopters will operate off the RSN's new frigates.

The Singaporean Ministry of defence noted that this acquisition would enhance the RSN's capability to undertake a wide spectrum of missions and carry out its mission of defending Singapore and its vital sea lines of communications more effectively.

Under a contract signed between MINDEF and Sikorsky Aircraft Corporation of the United States, the helicopters are scheduled for delivery to the RSN between 2008 and 2010.

Final Arleigh Burke ordered

The US Department of Defense has announced that Bath Iron Works, a unit of General Dynamics, received a $562.1 million modification to its FY02-05 DDG-51 class multi-year contract to build the final ship of the Arleigh Burke class. As the 34th DDG-51 class destroyer built by Bath Iron Works, DDG-112 represents the culmination of new construction for the US Navy's AEGIS shipbuilding program and marks the beginning of a major transition for the Navy as it moves from the DDG-51 to the next generation of destroyer, the DD(X).

The Honorable John J. Young Jr., assistant secretary of the navy for research, development and acquisition, described the action as another "landmark on the highway" of AEGIS shipbuilding.

"This is the last of 62 DDG-51 class ships, the final act of a play that will be reviewed as one of the most successful defence acquisition programs in history," said Young.

Like its other Arleigh-Burke class ships, DDG-112 will be a 9,200-ton multi-mission guided missile destroyer capable of conducting a variety of operations, from peacetime presence and crisis management to sea control and power projection, in support of the National Military Strategy. DDG-112 will be capable of fighting air, surface and subsurface battles simultaneously and will contain myriad offensive and defensive weapons designed to support maritime defence needs well into the 21st century.

The ship will be built in Bath, Maine, and the Navy expects delivery in December 2010. DDG-112 will benefit from the considerable technological advancements and engineering upgrades that have been developed, tested and installed in the class since the commissioning of DDG-51 July 1991.

Second French aircraft carrier design phase begins

The French Minister of Defence, Mrs Michèle Alliot-Marie, has launched a design phase for the French Navy's second aircraft carrier.

This step marks the end of the program's preparatory phases, during which the aircraft carrier's main technical and operational characteristics were defined. They also validated the French President's decision to opt for conventional, rather than nuclear, propulsion for the new ship.

Teams from the Ministry of Defence and participating manufacturers will now undertake the ship's detailed design, which will lead to the beginning of the production phase, presently scheduled for 2006.

A contract for the design work, worth approximately 100 million EUROs, will be awarded by the defence procurement agency, DGA, to DCN and Thales Naval France, which will act as joint prime contractors. Other major manufacturers involved in the naval sector, such as Alsthom-Chantiers de l'Atlantique and EADS will also participate in the design phase.

Inline with the strategic guidelines decided during the French-British summit meeting of November 2004, the design phase will include risk reduction and co-operative opportunity studies so

The first of the RAAF's new 737 Wedgetail Airborne Early Warning & Control aircraft over Sydney during a recent visit to Australia. The aircraft was visiting the bi-annual Avalon airshow and returned to the US for further fitting out and tests before returning later this year to enter service with the RAAF's 2 Squadron based at Williamtown in NSW. (RAAF)

as to determine, by the summer of 2005, the feasibility and the scope of co-operation between the French and British aircraft carrier programs.

The decision to equip the French navy with a second aircraft carrier was included in the multi-year defence planning budget for 2003-2008. The new ship is to be commissioned in 2014, in time to ensure the French Navy's uninterrupted naval air capabilities when the current aircraft carrier, the nuclear-powered CHARLES DE GAULLE, will become unavailable due to its scheduled refuelling and refit.

Navy League Victoria host CN for Creswell Oration

The Annual Creswell Oration, organised by the Victorian Division of the Navy League of Australia, was given by Chief of Navy, Vice Admiral Chris Ritchie at a luncheon hosted by The Naval Officers Club, Navy League and Naval Association in the Headquarters of the Returned Services League in Melbourne, on the anniversary of the foundation of the Australian Navy on March 1st 1901.

The function was attended by 80 people. 15 guests included CN, SNO Vic., the Captains of

The Chief of Navy, VADM Chris Ritchie (left), receiving a presentation from CMDR John Wilkins (Rtd), President Victorian Division of the Navy League of Australia, during the annual Creswell Oration in Melbourne. (John Bird)

HMAS BALLARAT and NUSHIP TOOWOOMBA and other officers and ratings from HMAS CERBERUS. Also in attendance were Elizabeth Sevior, the grand-daughter of Admiral William Creswell, together with her sister-in law, Rosemary Creswell.

The luncheon was hosted by John Wilkins, President of Navy League in Victoria and CN was introduced by Elizabeth Sevior.

Admiral Ritchie in his address, compared the relatively unfettered command of the Navy by Creswell and the situation pertaining today, where CN does not have operational control of Navy, nor indeed unhindered day to day control of naval personnel. He spoke of some of the proposed Navy acquisitions presently in the pipeline and made mention of critics of the proposed Air Warfare Destroyers, emphasizing the urgent need for these vessels for the maritime defence of the nation.

RSS STEADFAST launched

The Republic of Singapore Navy's (RSN) third Delta class frigate, RSS STEADFAST, was launched on 28 Jan 2005, by Mrs Tony Tan Keng Yam, wife of Deputy Prime Minister and Co-ordinating Minister for Security and Defence Dr Tony Tan Keng Yam, at Singapore Technologies Marine yard. DPM Tan officiated at the launching ceremony.

The launch of RSS STEADFAST, the second locally built frigate, is an important milestone in the RSN's frigate program. The RSN's stealth frigates will be equipped with advanced sensor and weapon systems, and have enhanced anti-air, anti-surface and anti-submarine warfare capabilities.

When the RSN's frigates come into service from 2007 onwards, the Navy's ability to undertake a wider spectrum of missions and carry out its missions of defending Singapore and its vital Sea Lines of Communications (SLOCs) will be enhanced.

The first Horizon class air warfare frigate, Forbin à quai, was launched on 10 March for the French Navy (Marine Nationale). (DCN)

Observations

By Geoffrey Evans

CHANGES AHEAD FOR NAVIES

Two articles in the January 2005 issue of *PROCEEDINGS*, the journal of the United States Naval Institute, are of particular interest at a time when many nations are reviewing the structure of their Armed Forces in the light of changed and changing international events. The first concerns a new warship which it is claimed by the authors* will have a similar effect on world navies as the Royal Navy's DREADNOUGHT had when the first turbine-driven, all big-gun battleship was launched in 1906.

THE DD(X) PROJECT

The initials DD are normally used to distinguish (fleet) destroyers from, other classes of warship but the new surface combatant planned for the US Navy at 14,000 tons is well into the CA or heavy cruiser category. The ship will introduce new systems and capabilities expected to be passed on to new generations of surface warships; they include:

- An integrated power system providing electric power for all the ship's needs including the propulsion motors, combat systems, hotel services etc. (introduction of the system is likened to the shift from sail to steam). The engine room will be unmanned.
- An Advanced (155mm) Gun System firing long-range (85 nautical miles) precision-guided land attack projectiles, together with a missile firing capability.
- New cutting edge sensors and a combat system to counter, threats from below, on and above the surface of the sea. Advanced command, control and computing systems
- Improved habitability and workplace standards for personnel.
- Low signature design characteristics to reduce chances of detection.

The primary mission of the multipurpose DD(X) will be to operate in littoral areas and influence events on land. It is anticipated the critical systems will be installed in the lead ship in the 2008-9 time frame. It might be expected that the developments currently taking place in the USN will be kept in mind by those responsible for bringing into service the Australian Navy's (smaller) Air Warfare Destroyers, planned to be available in 2013.

A computer generated image of the USN's DD(X).

AMERICANS LIKE AUSTRALIAN CATAMARANS

The second article in *PROCEEDINGS* reported in enthusiastic terms on tests carried out on three Australian-built catamarans, or HSVs (High Speed Vessels) as they are described by the author of the article**.

The three vessels involved – JOINT VENTURE, SPEARHEAD and SWIFT, the last-named incorporating features learned from earlier experimentation with the first two – have created a great deal of interest in the US Armed Forces.

Each component of the Forces sees a particular use for this type of vessel; the Army as a support vessel able to move personnel and materiel rapidly, the Marines agreeing and extending the use to non-combatant evacuations and riverine operations, while the Navy sees the HSV as a combat orientated platform. The three have been tested in a range of military operations in the Middle East.

Because of the HSVs speed – SWIFT is reported to be capable of more than 46 knots – and their relatively shallow draft compared to a conventional sealift ships and variety of uses, they are well-suited to littoral operations.

The newest of the three under test, SWIFT, is able to accommodate two helicopters and the M-1A1 (Abrams) main battle tank as well as provide facilities for the operation of small craft. Other activities envisaged include:

- Command and Control
- Anti-submarine Warfare
- Mine Countermeasures and Mining
- Medical Support for Land Forces.

Armament is stated to be largely for self-defence.

The RAN has had experience with HSVs, utilizing the leased catamaran JERVIS BAY for logistical purposes in the 1999 East-Timor operation. As with the DD(X) one must assume Navy and Defence are keeping a close eye on HSV developments and no doubt encouraging the Australian pioneers and builders, Incat in Hobart and Austal in Fremantle, to maintain their lead in this particular and important area of marine development.

* Captain C. H. Goddard, Program manager in the Program Executive Office for Ships.

Commander C H Marlzs, DD(X) Requirements Officer in the office of the Chief of Naval Operations.

** Frank S Mulcahy, Civil Engineer Corps USN, former surface warfare officer and Naval War College graduate.

OBITUARY; ADMIRAL MICHAEL WYNDHAM HUDSON AC

The Navy League lost a wise adviser and strong supporter when Admiral Hudson – "Mike" to his colleagues and friends – died in Sydney on 27 February – just a few days short of his 72nd birthday.

It is not for this writer to provide a detailed account of Mike Hudson's career in the Service he entered as a cadet midshipman in 1947 and departed in 1991 as an Admiral; nor to write of his numerous 'post retirement' activities and interests other than those with which the writer is personally familiar. It is however, appropriate to record in *THE NAVY* a selection of the principal appointments listed in the 2002 edition of Who's Who in Australia.

Although not mentioned in Who's Who, Mike Hudson distinguished himself at an early stage of his naval career by receiving the King's Medal (KM), a Gold Medal awarded annually by the Sovereign to the Cadet Midshipman who during his period of training, exhibits the most exemplary conduct, performance of duty, and good influence among his fellows. Qualifications gained in later years included Fellowship of the Australian Institute of Management (FAIM) and following courses at the Naval Staff College, Canada (NDC (C)), the Joint Services Staff College (JSCC) and The United States Armed Services Staff College (AFSC).

The future admiral's seagoing commands were HMA Ships VENDETTA 1970, BRISBANE 1974-75, STALWART 1976-77 and MELBOURNE 1981-82. He was promoted to Rear Admiral in 1982 and appointed Flag Officer Commanding HMA Fleet, serving 12 months in that appointment before becoming Assistant Chief of the Defence Force Staff (Policy), a position he occupied until appointment as Chief of the Naval Staff (CNS) in 1985 and promotion to Vice Admiral. Instead of the customary three years, VADM Hudson served as CNS for six years, retiring on 8th March 1991 with the rank of Admiral. During his service in the RAN he was awarded the AO in 1985 and AC in 1987.

The late VADM Mike Hudson AC. (RAN)

As Federal President of the Navy League at the time, the writer had the benefit of a number of discussions with CNS Hudson. In his retirement, among his many other activities he became a member of the Navy League's Advisory Council and the discussions continued, albeit a good deal more frequently, especially when the League was preparing submissions to the Parliamentary Foreign Affairs and Defence Committee. His advice was invaluable.

Mike Hudson was a determined man who knew what he wanted but in the writer's experience, was always prepared to listen to sometimes contrary opinions. The League will miss him.

PIRACY
A Twenty First Century Problem On the Rise

By Paul Johnstone

In the Twenty-First Century context, when someone mentions piracy almost immediately the idea of the theft of intellectual property, trademark and copyright violations come to mind. Unfortunately, the traditional use of the word in the context of maritime high jacking, kidnapping, murder and rape at sea has remerged alive and well within both Africa and Asia.

PIRATES?

The United Nations Law of the Sea defines piracy as 'violence on the high seas' and 'an incident beyond any states 12 nautical mile territorial waters'. When piracy occurs in territorial waters it is referred to as sea robbery. The romantic notion of a pirate or buccaneer such as the likable rouge played by Hollywood actor Errol Flynn is in reality nowhere near the real world truth.

Modern-day maritime pirates can be divided into three kinds:

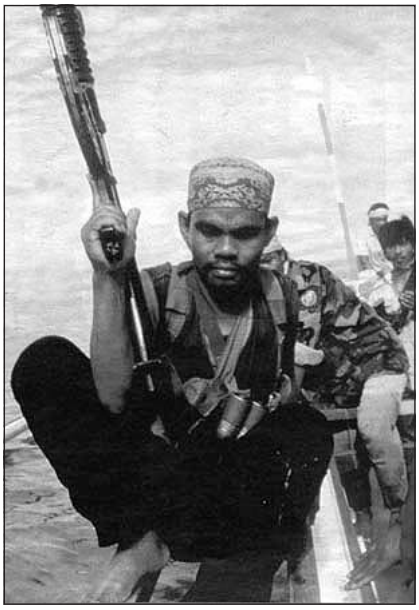
- 'Smaller' pirates who simply rob the crew and then depart. This usually occurs when the victim vessel is at anchor or at port.
- Pirates who rob the crew and steal the cargo on board.
- The third type of pirates take over the vessel, re-flag it, and then run a "phantom ship" which in turn, steals the cargo of anyone foolish enough to consign such goods to it.

Smaller pirates are usually only interested in the safe of the ship and the possessions of the crew (the safe of a ship sometimes contains a considerable amount of money to pay port and payroll fees). The crews are most often left alone and the ships are usually set adrift. Occasionally the ships are taken as well and the crew is set adrift in a dolly. The ship is then re-painted, re-named and re-registered, and sold.

When the pirates are finished looting a ship they can usually escape fairly easily because they usually leave the crew imprisoned or they force them off the ship before they leave. Pirates can also choose which nation's coastal waters they will escape to. Some of the people in the coastal villages and local towns of Indonesia, Malaysia or Singapore are even sympathetic towards the arrival of pirates. In the Far East, where many of these piracy attacks occur, pirates have several harbors to hide in and operate from, where the locals will protect them.

The face of modern piracy. Gone are the swords, eye patches, outlandish hats and swinging from the mainmast. Modern high seas pirates are now armed with grenade launchers and have the ability to coordinate several other pirate entities through two-way radios to swarm a target vessel and warn others of movements by the authorities.

The second and third types of pirates tend to be much more organized, 'professional' pirates. They are often linked to other criminal organization, on land which assist them to carry out the sale of the stolen goods and cargo, and assist in the forging of cargo documentation. Here is an example of the activities these pirates undertake:



With a string of 40mm grenades around his chest and brandishing an AK-47 assault rifle fitted with a grenade launcher this pirate resembles a terrorist more so than a high seas thief. The use of such dangerous weapons has caused many to believe that modern pirates have close links with terrorist groups.

1. The pirates look for a commodity seller or shipping agent with a letter of credit that has almost expired (this happens regularly since the demand for shipping space exceeds that which is available).
2. The pirates then offer the services of 'their' ship. (This is the ship that is stolen, re-painted, re-named, and re-registered).
3. A temporary registration certificate is then acquired through a registration office at a consulate. To get such a certificate a bribe combined with verbal information or some false and/or forged documents is necessary. This certificate provides the ship with an official (new) identity.
4. The ship is loaded and the shipper receives his bill of loading.
5. The pirates then sail to a different port than the one named as the destination on the bill of loading. There they unload the cargo to a partner in crime or an unsuspecting buyer and change the temporary registration certificate once again.

The third type of pirates described involves sophisticated organisations of pirates who are able to steal at least $200 million a year worth of cargo. Many of the ships are then

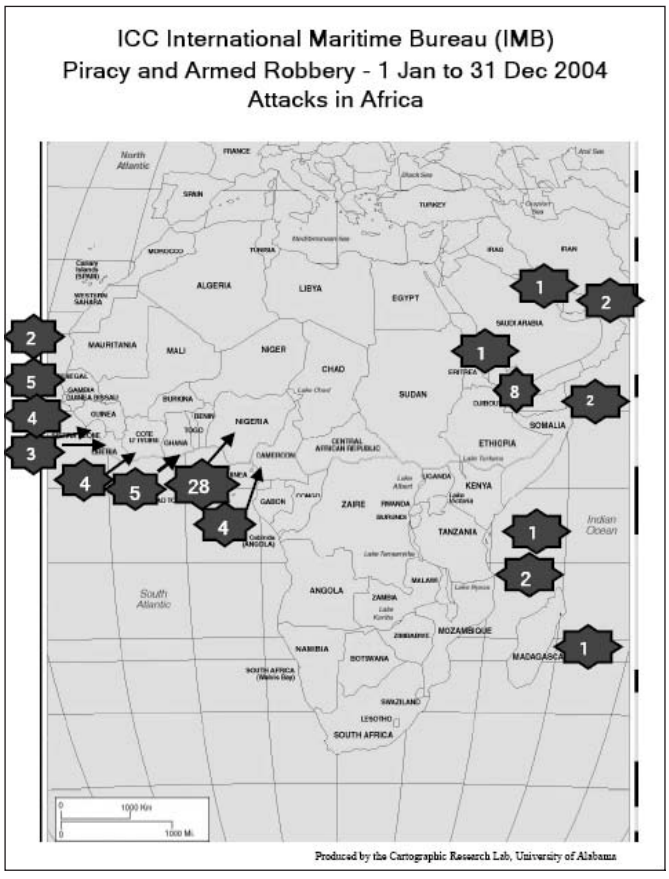
flagged in either third world or economically underdeveloped countries (like Honduras and Panama), and usually take cargo that is easily disposed of but not easily traceable, such as timber, metals, and minerals. The significance of the third type lies in the sophistication of these maritime thieves. As indicated by the measures these pirates take, as outlined above, they are professional thieves.

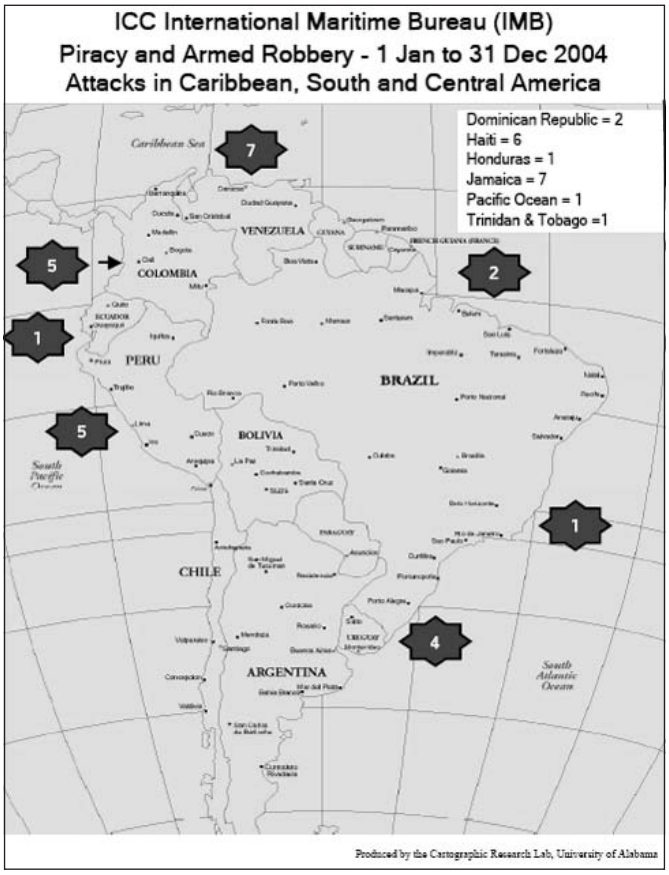
All three types of piracy are of concern. But, where the cargo and/or ship is the target, is of greatest concern since lives are at stake; The crew of the hijacked ship could be marooned or even thrown overboard by the sea raiders.

PIRACY ON THE RISE

Failed States and abject poverty in countries like those in Africa has seen the re-emergence of maritime piracy within this region and subsequent threats to both shipping and people. The height of the Asian Economic Collapse saw the rise of piracy in Asia, especially within the Malacca Straits. It is estimated that around 95% of the world's commerce is currently carried by ship with approximately 600 ships a day moving through the Malacca Straits and South China Sea. Many of these ships are carrying cargos such as oil and Liquefied Natural Gas (LNG) to the energy hungry and developing nations of Asia. A principal challenge for any Nation is exercising control of their Economic Exclusion Zone (EEZ) and their Sea Lanes of Communication (SLOC). Piracy is introducing new constraints, expenses and exposing many of the sovereignty limitations many nations suffer from in effectively responding to this form of maritime challenge.

Open source intelligence reports have suggested that in Asia poorly paid naval elements of cash strapped nations have at times resorted to piracy and kidnapping to supplement their incomes. Logically they have the tools at their disposal to conduct such operations and with no one to watch the watchers they have little chance of being apprehended and or convicted.





The rise of economic refuges and people trafficking has provided a steady source of prey and income for those involved in piracy. In Africa, it is often the dominant warlord who has control of naval assets or who has effectively modified fast boats that have become seaborne predators. Unconfirmed reports have indicated that members of the Indonesian Free Aceh Movement or GAM have possibly used piracy as a means to fund their ongoing war against the Jakarta government.

The fight against piracy is currently monitored and largely co-ordinated from the International Chamber of Commerce's International Maritime Bureau (IMB) in London, Kuala Lumpa and The United Nations International Maritime Organization (IMO). The IMB offers a rapid response investigation and a satellite tracking service as well as promoting and trailing a variety of systems to work as deterrents and preventative measures relating to acts of piracy. The IMO principally attempts to coordinate international approaches to counter piracy, by educational seminars and issuing regular reports to notify shipping and shipping companies of regional piracy hotspots. Cooperation between Governments and officials are also fostered through the efforts of IMO instilling a better understanding of regional and international efforts and responses to the act of piracy.

Some of the physical deterrents to piracy that have been developed for use on ships include a 9,000 volt anti-boarding fence around the perimeter of the ship's deck. This 'Secure-Ship Fence' is both collapsible and storable and zones may be rendered inactive to allow crew to conduct work on both the deck and the cargo whilst still having the other zones live and providing protection. With the fence is a sophisticated control module that detects any attempts of entry and activates lights and alarms to warn the crew. An advantage of the ships electric fence is that is protects the ship and crew while negating the need to arm them. The 9,000 volt charge is not lethal, not hindered by salt water and will operate in all types of weather.

Unfortunately, the electric barrier cannot be used on oil or LNG tankers or carriers of flammable materials.

The satellite-tracking system, or SHIPLOC, is currently being enforced through the International Ships and Port Facility Code (ISPS). SHIPLOC is a small satellite tracking system hidden upon a vessel allowing owners to monitor the movement of their ship. The Safety of Life at Sea Convention (SOLAS) has required all ships to display their International Maritime Organisation (IMO) number visibly on their hulls.

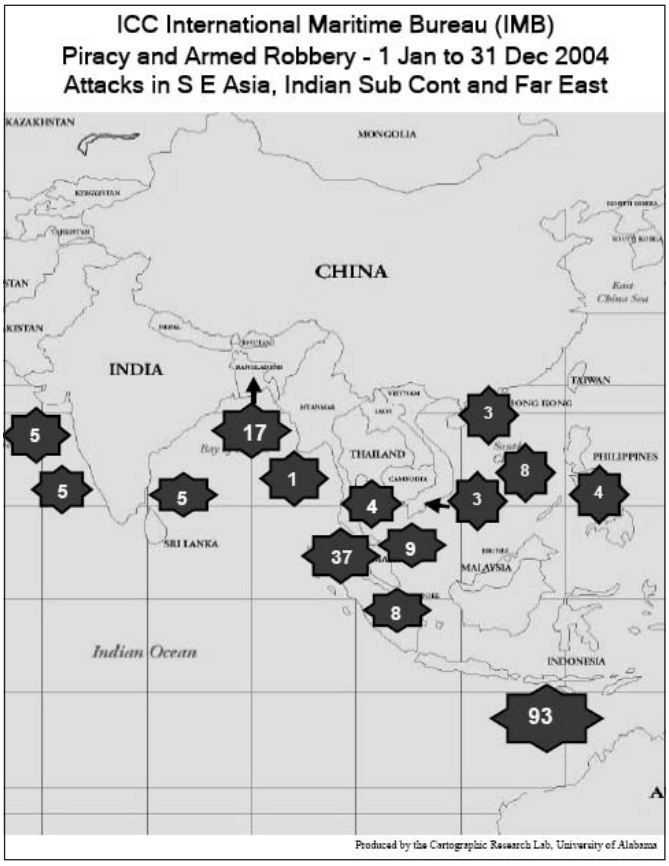
One simple defence mechanism and technique that has proven to be most successful is to have crew posted on key points of the ship when entering dangerous waters equipped with radios and charged fire hoses. Any attempt to board the ship sees the unwelcome boarder hit with the full force of the fire hose, risking a fall and possible drowning or an encounter with the ships massive propellers. This is particularly safe defensive option for oil and LNG tankers removing the risk of firearms, spark and flame.

Nations such as Singapore are beginning to classify piracy along the same lines as terrorism. Many groups involved in piracy also have links with religious extremist groups either through family bonds or through economic dependancy. As mentioned earlier it is thought the Indonesian Free Aceh Movement or GAM have possibly used piracy as a means to fund their ongoing war against the Jakarta government. Skills learned on the 'piracy job' can also translate to extremist sponsored or paid acts of terrorism (much like mercenaries). Links between crime gangs and terrorists are starting to emerge with the term 'narco-terrorism' being used to describe ongoing Al-Qeada efforts to fund operations through drug manufacture.

Modern pirates are increasingly using sophisticated equipment, with high levels of coordination, high levels of violence and modern weapons systems. This worrying trend has seen the forum of ASEAN nations take notice given the growing similarity with modern terrorism. One concern has been the worldwide links between religious militants and the discovery of a plot to attack the Royal Navy aircraft carrier HMS ARK ROYAL (CVS) as it transited the Straits of Gibraltar to support operations in Iraq in 2003. Other threats have also been allegedly discovered against the recently launched QUEEN MARY 2 and other luxury cruise liners.

Just like the tanker wars of the 1980's in the Persian Gulf a new and expensive naval or armed commitment of escorting sea trade may need to occur, and with this a cost that will have to be passed onto the consumer. Currently, two thirds of the world's trade passes through South East Asia placing enormous pressure on the nations that border these already congested sea lanes to guarantee both the rights of protection and of passage. ASEAN has attempted to organise formal cooperation in policing areas such as the Malacca Strait only to have nations such as Malaysia reject the assistance of foreign forces to patrol its waters. This stance by Malaysia and others has contributed to the already significant gaps within regional maritime coverage and deterrent efforts. In the year 2000, at the peak of international piracy the financial loss due to maritime piracy was estimated to be US$16 billion.

Africa is another significant point of piracy especially around the continent's East Coast, the Horn and Western stretch of waters between Nigeria and Guinea. Piracy within African waters stems from unchecked activities from warlords and militias who are active in hostage taking, ransoming and theft. Many of the weapons in the hands of militants



are reported to have come via Somalia which, as discovered during United Nations Operation Restore Hope, is a violent fragmented nation awash in an extensive range of weapons and a population who know how to use them. The US has responded to threats in this region and its own interest through the African Coastal Security Program. Currently, 15% of US oil is coming from this region and is expected to grow to around 25% as more oil platforms come on-line. Many of the African coastal nations cannot effectively enforce or police their EEZ. Foreign and unauthorised incursions occur regularly alongside illegal fishing to such a degree that fish stocks are almost depleted. An inability to respond to these threats at the most basic level induces even greater concerns when it comes to protecting shipping or oil platforms.

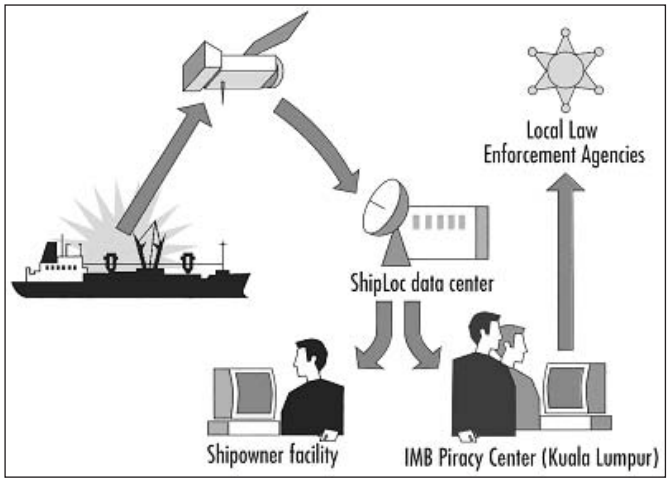
Apart from the loss of life, shipping and commerce there is the threat of severe environmental hazards resulting from the acts of piracy. In 1999, the fully laden crude carrier MT *CHAUMONT* was left uncrewed for 70 minutes sailing at full speed towards the southern end of the Malacca Strait after being attacked by pirates. The environmental consequences from running aground or colliding with other shipping would have produced an oil spill of an unprecedented size in the region. For a region that depends heavily upon the sea for fish products and desalination of water for drinking a spill of this magnitude would have had severe economic losses as well as environmental.

Taiwan and Japan are two nations that are totally dependant upon the shipping of foreign oil while China imports a significant proportion of its oil to meet its energy production needs. An interruption or delay to oil deliveries would have disastrous impacts upon the economies of these nations and threaten their national security. A maritime response would most likely be enacted by Japan and China to threats such as this but Taiwan may be tied up with domestic security considerations and international concerns about its involvement offshore. Japan, on the other hand, has provided

significant contributions to the war on terror in the form of support ships and refuellers to allied navies. Regular Japanese patrols and a desire for cooperation within the South East Asian region will incur constitutional and regional concerns stemming back to Japan's Imperial past. Alternatively China's involvement would most likely be viewed as an attempt to expand its regional ambitions and influence, altering a balance that nations such as the US and Australia may feel they would need to counteract.

Earlier this year the C-IN-C USPACOM (Commander in Chief US Pacific Command) Admiral Fargo testified to the US House of Representatives that the Pentagon was formulating a Regional Maritime Security Initiative (RMSI) to combat the threats of piracy, maritime terrorism, sea trafficking of people and drugs. Principal components of the initiative would be greater intelligence sharing with Asian members of the Initiative and staging of US Marines and Special Forces on armed high-speed interdiction vessels within the region. The island State of Singapore has demonstrated the most enthusiasm for the proposal by negotiating with the US over the terms of RMSI. Indonesia and Malaysia have both expressed concerns relating to their own ability to maintain adequate security and meet the demands that would be placed upon their naval and Coast Guard services.

A big part of the rationale behind the stance taken by Indonesia and Malaysia is that they view security as a domestic issue that they and other members of the region will sort out rather than introduce the issue of foreign intervention. Apart from the issues of national pride and sovereignty, it is believed an active participation by US or other foreign forces may be counterproductive to a degree that may provoke terrorist incidents and foster instability within these nations that have populations with strong anti-western, anti-American and radical Islamic beliefs.



The ShipLoc system is currently providing vital intelligence to authorities on merchant ships at sea that may be under attack or have been attacked and seized by pirates.

THE FUTURE

Piracy is alive and well globally and often has strong and effective links with modern maritime terrorism and the global War on Terror. For nations that rely heavily upon the Sea Lanes of Communication for much of their economic lifeblood the threats of kidnapping, murder, disruption to trade and environmental catastrophe is of enormous concern. The cost to adequately policing and monitoring the high volumes of maritime trade is generally well beyond the capabilities, resources, finances and political will of shipping companies and nations. It is unlikely that a coordinated effort would induce an overall halt in pirate activity but would surely reduce many of the threats in their current form.

Piracy is estimated to have been occurring for over 3000 years and has long been a means of instilling fear, interrupting trade and commerce and its associated profits. In our region the Asian Economic Crisis was the trigger by which this scourged remerged in its largest and most violent form since the conclusion of the Vietnam Conflict and the era of the boat people. The failed states and lawlessness of Africa have also been active contributors to the rise of piracy along side the international reduction in naval surface fleets and their at sea presence. This is little doubt that these issues have aided and inspired confidence within the modern perpetrators of this ancient terror of the seas.

PRESS RELEASE FROM THE INTERNATIONAL MARITIME BUREAU (IMB) OF THE EUROPEAN-BASED INTERNATIONAL CHAMBER OF COMMERCE

ANNUAL DEATH TOLL FROM PIRACY RISES

LONDON, 7 FEBRUARY 2005 –

Pirates preying on shipping were more violent than ever in 2004 and murdered a total of 30 crew members, compared with 21 in 2003, the ICC International Maritime Bureau reported in its annual piracy report for 2004.

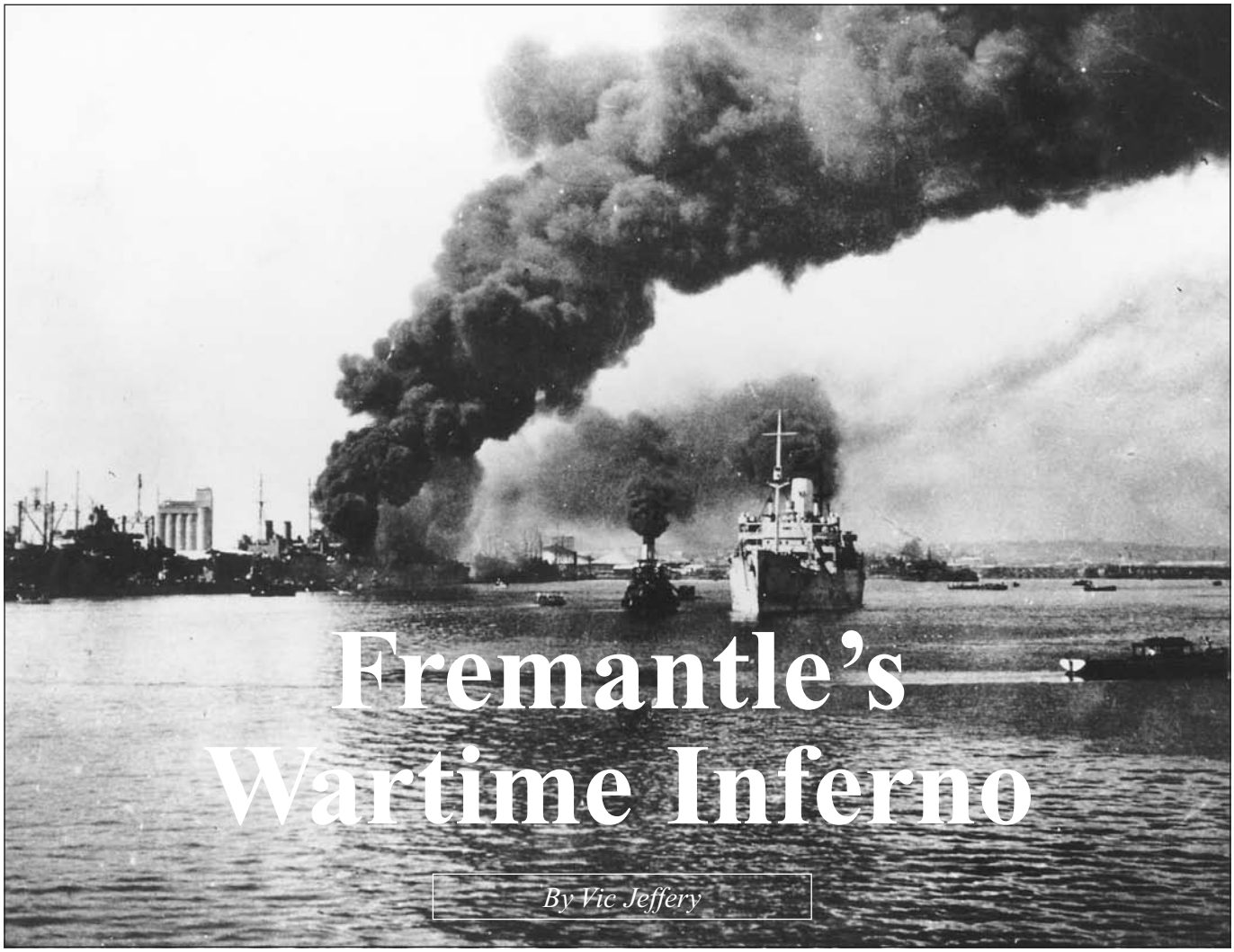
The number of attacks reported worldwide through the IMB Piracy Reporting Centre in Kuala Lumpur was 325, down from the 445 recorded in 2003.

Indonesian waters continue to be the scene of the highest number of attacks, with 93 incidents reported in 2004. While this is down from 121 in 2003, it still accounts for more than one quarter of piratical attacks reported worldwide.

The report said hijackings of tugs and barges and the kidnapping of crew members were on the rise, especially in Indonesian waters, in the Northern Malacca Straits, and off North Sumatra. While in the past these attacks had been thought to be the work of Aceh rebels, there were now increasing signs that crime syndicates are also using fishing boats for such attacks.

Attacks in Nigerian waters were down from 39 in 2003 to 28. However, the report said that offshore Nigeria still had the third highest number of incidents and was regarded as the most dangerous area in Africa for piracy and armed robbery at sea.

The IMB is part of ICC Commercial Crime Services, the division of the International Chamber of Commerce dedicated to fighting all types of commercial crime.



Fremantle's Wartime Inferno

By Vic Jeffery

Thick black smoke obscures the blazing MV *PANAMANIAN* with the Royal navy submarine depot ship HMS MAIDSTONE and a US Navy submarine depot ship, believed to be the USS EURYALE, forward of the merchantman. The RAN Signal Station can be seen between the two depot ships, located on top of the grain silos. The MV *UMGENI* is in midstream with a harbour tug after being moved away after outboard of the blazing ship.
(Vic Jeffery collection)

A major fire which threatened to cause major disruption and destruction to the allied war effort in the Port of Fremantle in 1945 was hidden behind a veil of strict wartime security. Vic Jeffery lifts the veil for readers of *THE NAVY*

January 17, 1945, was a typical hot Western Australian summer's day with the temperature being recorded as 107 degrees Fahrenheit in the shade and with a shimmering heat haze hanging over the bustling harbour, crammed with allied warships, submarines, depot ships, and merchant ships.

On that day a fire broke out at No. 8 berth at North Wharf around 3.15pm, and quickly engulfed the MV *PANAMANIAN,* a 15,575 ton merchant ship. It then spread to the Royal Navy submarine depot ship, HMS MAIDSTONE, berthed immediately forward of the old freighter.

MV *PANAMANIAN* had arrived in Gage Roads on November 26, 1944, coming into the inner harbour three days later to unload her cargo and then being moved several times before ending up at No. 8 berth on that fateful day loading bags of flour. It was only the advent of World War II that had saved the old ship from the scrapyard.

By the time of the outbreak of fire, *PANAMANIAN* had taken on 154,487 bags of flour totalling 10,339 tons, all of which was destined to be ruined.

The temperature on the *PANAMANIAN's* deck that afternoon during loading operations was estimated at 117 degrees Fahrenheit.

As a protection against the heat emitted from the winch on board, a winchman placed a piece of a hessian wheat sack over the cylinder.

During the afternoon tea break it was noticed to be smouldering and one of the stevedore's gang stamped this out and left the hessian on the deck. It was only a minute or two later another of the men, noticing that it was still smouldering, picked it up, just as the British freighter *UMGENI* was being berthed outboard of the ship.

Instinctively he threw it over the shoreward side expecting it to fall into the water between the ship and the wharf. As the smouldering bag fell it ignited and burst into flames and was caught by one of the horizontal timbers on the wharf structure where it remained burning.

Part of the bag trailed on the water surface where it came into contact with the film of oil, which acting like a huge wick, saw a sudden burst of flame which shot up and ignited mooring ropes and paint on the hull of the *PANAMANIAN*.

The fire quickly spread to hessian bags onboard and leapt up to the bridge as well as under the wharf where it is believed the summer conditions and the flammability of the dry wharf timbers added to the spreading blaze.

Soon the ship was well ablaze, smoke billowing out of three holds, the saloon and promenade decks burning fiercely and ammunition for the ship's defensive armament of a single 4-inch gun mounted on the stern, a 12 pounder, eight 20mm Oerlikons, along with rockets, exploding.

Much gallantry was displayed as men struggled to throw ammunition overboard. Efforts to tow the double-banked freighter *UMGENI* were successful as the ship was cast off and was towed to safety by a harbour tug.

Within a short space of time, the fire had raced westerly along 350 metres of the North Wharf opposite *PANAMANIAN* and the Royal Navy submarine deport ship HMS MAIDSTONE where fire broke out on the bridge.

With flames licking its side, MAIDSTONE was quickly towed out into midstream and its fires extinguished. With its load of torpedoes, ammunition and diesoline the submarine depot ship was a floating bomb.

Two US Navy submarine depot ships had been moved out of the inner harbour along with the submarines bustled alongside them. The fear of detonation of explosives onboard a ship or submarine was obviously a major concern.

On that fateful day there had been a total of 13 United States Navy, six Royal Navy and one Dutch submarine alongside depot ships at North Wharf in Fremantle's inner harbour.

Aboard the *PANAMANIAN* the fire continued to rage fiercely. All essential personnel had been cleared away from the area when the flames reached the anti-aircraft magazine.

The continuously maintained fire brigade of the United States Navy upon the North Wharf for the protection of its own vessels enabled fire-fighting measures to be undertaken rapidly.

One US submarine rescue ship, USS CHANTICLEER, steamed up and down pumping thousands of litres of water at and under the wharf with its large pumping plant and breaking up the oil on the water with its wash.

Metropolitan fire brigades and the Fremantle Harbour Trust's own volunteer fire brigade was quickly on the scene where the chief officer of the WA Fire Brigades Board personally supervised firefighting operations.

The first of the Metropolitan Fire Brigade engines to arrive took up a position on the wharf where, unfortunately, it became enveloped in the fierce fire and guttered.

There were ample numbers of allied service personnel readily available to assist the fire-fighting efforts in assisting the various fire brigade units.

After 6pm, all efforts were concentrated on extinguishing the fire onboard *PANAMANIAN,* and soon after, with the amount of water being poured into it, the ship started to list badly to port, which was in the direction of the harbour fairway, resulting in the mooring lines carrying away and the vessel drifting from the wharf and the streams of hoses.

Tugs were quickly on the scene and pushed the *PANAMANIAN* back to the wharf. The decision was then made to reduce the delivery of water for the purpose of extinguishing the fire and utilise it for the filling of starboard tanks of the vessel in an endeavour to bring her back to a more even keel.

Owing to the danger of the fuel oil tanks likely to erupt and in the view of the fire then raging fiercely along the whole of the promenade deck of the vessel as well as in the forward hatches, the naval authorities ordered all warships in the harbour to stand-by ready to proceed instantly to Cockburn Sound or Gage Roads in the outer harbour.

The US Navy submarine rescue ship USS COUGAL pumps thousands of litres of water on the burning MV *PANAMANIAN* and the burning North Wharf as she steams up and down the north eastern section of Fremantle Harbour breaking-up the oil on the surface whilst US Navy personnel help fight the fire on North Wharf. (USN)

The Harbour Master then gave corresponding directions to all merchant vessels, and thereafter tugs were employed assisting in their removal.

By daylight the next day the fire on the ship had then been brought under control and the immediate risk of its loss had passed.

Tragically there was one fatality when a Royal Navy Able Seaman, Kenneth Shooter, fell down a hatchway on the *PANAMANIAN* while fighting a fire in a hold in which the cargo was ablaze.

It was eventually seven days from the time of the outbreak of the fire until the last of the fire fighting equipment was finally withdrawn.

Investigations concluded that the oil that ignited causing the fire was a comparatively small quantity of furnace oil probably recently discharged from the ship and had not dispersed being in the sheltered area between the ship and the wharf.

Being an old ship, the MV *PANAMANIAN* had many oil leaks in the engine room which regularly pumped its bilges out into the harbour.

This, coupled with the surface oil present during the war through Allied submarines emptying and cleansing their diesoline tanks prior to receiving fresh supplies and the furnace oil from the many visiting ships, left a continual film of surface oil in the harbour.

The Harbour commissioners had expressed concern with this problem and tried unsuccessfully to alleviate it. Aggravating the problem was the fact that more than 6,000 vessels a year were using the busy harbour during the war.

There had been a smaller similar fire onboard the merchantman *EDENDAL* in Fremantle Harbour on November 1, 1943 when a cutting plant onboard had ignited gas from volatile oil at No. 10 berth, North Wharf.

In the case of *EDENDAL* the brief 30-minute fire had caused $110,000 damage.

In 1946 the Eastern Asia Navigation Company Limited lodged writs claiming $1,034,000 for damages to the MV *PANAMANIAN* and its cargo upon the Fremantle Trust. The writs were defended by the Fremantle Harbour trust and the Court found in their favour.

The cost had been high – one fatality, $50,000 to repair and restore the wharf, $1,000,000 damage to the MV *PANAMANIAN* and its cargo and the loss of valuable fire-fighting equipment.

The Shanghai-registered
MV *PANAMANIAN,*
seen prior to its fateful fire.

A wartime aerial view of the crowded Port of Fremantle showing nearly 40 ships and submarines alongside and the floating US Navy dry dock ARD.10 in midstream. (Vic Jeffery collection)

HATCH, MATCH & DISPATCH

FIRST ARMIDALE NAMED AND LAUNCHED

The RAN has taken delivery the first of 14 Armidale class patrol boats, NUSHIP ARMIDALE.

Minister for Environment and Heritage, Senator Ian Campbell attended the naming ceremony, held at the Austal Ships construction facility, Western Australia on behalf of Defence Minister Senator Hill.

"This ceremony commemorates the successful launch of the vessel on 5 January 2005, following the design and construction over the past year," Senator Campbell said.

"This achievement is testament to Austal's and The Defence Materiel Organization's ability to deliver on time and on budget.

"I am sure that the ship trials over the next few months will also see the vessel's ability to meet the required performance".

The 56 metre all-aluminium monohull was named by Ms Jana Stone, the eldest daughter of Ordinary Seaman Donald Raymond Lawson who served on the original HMAS ARMIDALE, a Bathurst class corvette, during World War II.

This launch of the first vessel is a key milestone under Project Sea 1444 following the signing of a $553 million contract on 17 December 2003 with Defence Maritime Services (DMS) for the supply and long term support of a new Patrol Boat fleet of 14 Armidale class boats.

"I congratulate DMS, the principal contractor, and Austal Ships, responsible for the design and construction of the vessels for their work on this project," Senator Campbell said.

The Armidale class vessels will substantially improve the Royal Australian Navy's capability to intercept and apprehend vessels suspected of illegal fishing and quarantine, customs or immigration offences. The patrol boats in this regard play a major role in patrolling and protecting Australia's coastline.

Following the sea trials, NUSHIP ARMIDALE is scheduled for acceptance in May 2005.

The 14 patrol boats will be delivered at regular intervals over the next two-and-a-half years.

Chief of Navy, VADM Chris Ritchie, and the Austal Managing Director Mr John Rothwell walk past the newly named and launched ARMIDALE.

PRODUCT REVIEW

THE STARVATION BLOCKADES: NAVAL BLOCKADES OF WW1

By: Nigel Hawkins
Publ: Naval Institute Press, 2004
Reviewed By Mr Joe Strazeck

The majority of books dealing with the naval history of World War 1 see this in terms of the Battle of Jutland, the submarine war and eliminating German ships in distant seas. Whilst these events were elements of this conflict they do not place the overall war at sea into its proper context. This though, is what Nigel Hawkins has done with *The Starvation Blockades.* In this book Nigel Hawkins places the Great War at sea into its historical context. The war at sea was about economic survival, both sides needed to import by sea significant amounts of war material.

Both Germany and Britain recognised each others dependence on maritime imports and both countries took steps to stop the flow of war material to the other. This is the war at sea which Nigel Hawkins describes.

From the outbreak of the war the British initiated their blockade of Germany. German ships were taken as prizes and neutral ships were intercepted and inspected for what the British considered contraband. Ships found to be carrying war material had the cargo confiscated. These actions by the British infuriated the neutral, especially the United States. In the case of the United States the actions of the British were such that the possibility of a repeat of the War of 1812 was not too far fetched. Fortunately for the British the actions of the Germans in their submarine based counter-blockade ensured that this would not happen.

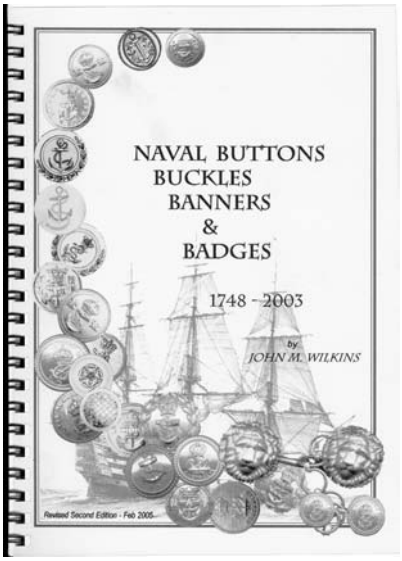
As the central theme of *The Starvation Blockades* is about economic blockade it is not surprising that Mr Hawkins devotes some time to examining the rules governing such operations and the rights of neutrals. In his discussions he clearly shows how the British were able to manipulate the concept of a blockade because of the power of the Royal Navy. Yet still they needed to treat carefully in the context of the United States. Whilst the British blockade was not very successful initially, it became so as the war continued. The German mine and submarine blockade on the other hand not only ultimately failed but also proved to be a strategic hindrance as it ensured American hostility to Germany.

The success and subsequent failure of the submarine campaign in the second half of the war is also examined. What is surprising about this period is the reluctance of the British Admiralty to introduce convoys, notwithstanding the historical evidence of their utility. When pushed on the issue the Admiralty found a number of excuses as to why convoys would not work. Eventually however, they were forced to try convoys and were pleasantly surprised to find out that the system actually worked, and worked well. This is not to say that there were no longer sinking and everything functioned perfectly. The introduction of the convoy system effectively broke the German blockade. British industry and population were sustained and an entire Army of fresh troops was transported across the Atlantic to the Western Front.

To read Nigel Hawkins' book is to understand the importance of winning the war at sea during the First World War. Victory at sea ultimately ensured victory on land, defeat meant economic and industrial collapse and at best a negotiated settlement with your enemy. *The Starvation Blockades* is a well written and researched book which should be read by all students of maritime strategy and those with an interest in the First World War.

NAVAL BUTTONS BUCKLES BANNERS AND BADGES 1748-2003

By Commander John M Wilkins RFD RANR (Retd),
Navy League Vic
Reviewed by Nick Fletcher, Curator, Military Heraldry and Technology, Australian War Memorial



Naval Buttons Buckles Banners & Badges 1748-2003 is the latest version of a detailed study which Commander John M. Wilkins RFD RANR (Retd), a prominent member of the Navy League, has been working on for some years. As its subtitle; 'History of British and Australian Naval Buttons – A Collectors Guide & Catalogue' suggests, this slim volume is primarily devoted to a sequential description of the buttons worn by the Royal Navy, the Navies of the Australian Colonies, the embryonic Australian Navy (Commonwealth Naval Force), and its successor, the Royal Australian Navy.

Heavily illustrated, the book depicts virtually every button variation used during the period. It also features insertions where relevant, showing belt buckles, swords and flags. The catalogue provides a useful guide to size, rarity and comparative value of the items listed, while a folding chart at the rear traces the development of the British and Australian national flags and naval ensigns. Potential buyers should be aware that the book is printed, edited and published by Cmdr Wilkins, and production values cannot be expected to match those of professional publishing houses. In general, however, it is admirably clear and well laid out, and should be easily understood by the reader.

Naval Buttons Buckles Banners & Badges 1748-2003 provides an indispensable guide for those seriously interested in the subject of Australian Naval uniform, and particularly in the buttons worn by the RN, the RAN and its predecessors. Much of the information which it contains is otherwise unobtainable, or at best difficult to locate. As such, the book, which is published in a limited edition of 200 copies, represents excellent value at $30.00 plus postage.

STATEMENT of POLICY

Navy League of Australia

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

The Navy League:

- Believes Australia can be defended against attack by other than a super or major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space around us and to contribute to defending essential lines of sea and air communication to our allies.
- Supports the ANZUS Treaty and the future reintegration of New Zealand as a full partner.
- Urges a close relationship with the nearer ASEAN countries, PNG and the Island States of the South Pacific.
- Advocates a defence capability which is knowledge-based with a prime consideration given to intelligence, surveillance and reconnaissance.
- Advocates the acquisition of the most modern armaments and sensors to ensure that the ADF maintains some technological advantages over forces in our general area.
- Believes there must be a significant deterrent element in the Australian Defence Force (ADF) capable of powerful retaliation at considerable distances from Australia.
- Believes the ADF must have the capability to protect essential shipping at considerable distances from Australia, as well as in coastal waters.
- Supports the concept of a strong modern Air Force and highly mobile Army, capable of 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.

As to the RAN, the League:

- Supports the concept of a Navy capable of effective action off both East and West coasts simultaneously and advocates a gradual build up of the Fleet to ensure that, in conjunction with the RAAF, this can be achieved against any force which could be deployed in our general area.
- Is concerned that the offensive and defensive capability of the RAN has decreased markedly in recent decades and that with the paying-off of the DDGs, the Fleet will lack air defence and have a reduced capability for support of ground forces.
- Advocates the very early acquisition of the new destroyers as foreshadowed in the Defence White Paper 2.
- Advocates the acquisition of long-range precision weapons to increase the present limited power projection, support and deterrent capability of the RAN.
- Advocates the acquisition of 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.

'Instant Navy'. The heavy lift ship *MARIA* leaving Fremantle with 10 Austal built patrol boats for the Yemani Navy. (Austal)

NUSHIP ARMIDALE at sea. (RAN)

Twilight for the F-14 Tomcat after more than 30 years of service. (USN)