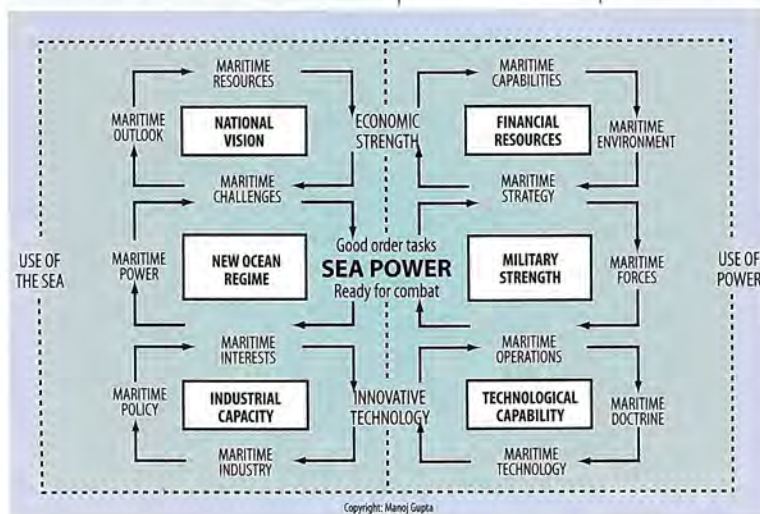


as partners in global ocean governance. There are four attributes that a nation must possess to develop own sea power. The first attribute is having to constitute a law, rule, standard or principle for the nation at sea. This requires articulating a national maritime vision. The second attribute is being able to constitutionally conduct the maritime policy, actions, and affairs of the nation at sea. To do this a nation must build on its financial resources, technological capability, and industrial capacity. The third attribute is having the political will to be able to act or function at sea in a manner of governing or control. The fourth attribute is being in military command of the sea and regulating proceedings at sea when required by national interests. This requires commitment to developing military strength for combat and good order tasks. The figure below summarises the cyclic process in the 'use of the sea' and 'use of power' at sea across six constituents that follow on from the attributes of sea power.

The *use of the sea* for free passage of trade and also regulated by the EEZ regime characterises a nation's right to sustainable development of its ocean wealth: from oil to gas, diamonds to gravel, metals to fish, and nodules to sulphur. The *new ocean regime* loop explains that growing

Sea power is clearly more complex than a simple 'command of the sea' and is no longer concerned with winning the war against a would-be adversary and deterring future aggression

Cyclic process in the 'Use of the Sea' and 'Use of Power' at Sea



maritime interests in the use of the sea have altered the scope of a nation's maritime power with new maritime challenges that are 'closely interrelated and need to be considered as a whole'⁵ at the national, regional, and international levels. The *national vision* loop envisions maritime resources needed in meeting emerging maritime challenges. The actual extent of a maritime resource would depend on the maritime outlook and economic strength of a nation. The *industrial capacity* loop visualises the nature of maritime interests that determine the size of a nation's maritime industry. What is needed is a robust national maritime policy that acts as a stimulus for innovative technology in developing the industrial capacity of the nation.

The *use of power* in protecting the national and international *use of the sea* would depend upon the political will and foreign policy of a nation to build maritime forces to secure the maritime domain. The *military strength* loop explains that the type of maritime strategy, when acting alone and in concert, would determine maritime force structures for the conduct of maritime operations. The *financial resources* loop envisions adopting a maritime strategy based on both the military and civil maritime capabilities of a nation. The financial resources available to build maritime

capabilities that shape the operating environment of maritime forces will depend upon the economic strength of the nation. The *technological capability* loop visualises a maritime doctrine that promotes innovative technology to sharpen the

technological capability needed for the conduct of maritime operations. The advancements made by a nation in maritime technology determine the conduct of maritime operations in support of national interests and global security.

NATIONAL OUTLOOK

In determining sea power for the future, there has to be recognition that every maritime nation has rights and responsibilities in conduct of maritime activities occurring within legitimately claimed maritime zones. All nations require a range of potential responses - diplomatic, operational, political, legal and non-governmental - to manage the multiple activities and must at the very least exert sea power within their maritime zones by maintaining or having access to capabilities for surveillance, monitoring, and control. Through improved coordination, cooperation, and collaboration at the national, regional, and international levels, nations could better secure national interests within their delimited maritime zones and achieve greater global security.

INTERDEPENDENCE AND INTEGRATION

Sea power is clearly more complex than a simple 'command of the sea' and is no longer concerned with winning the war against a would-be adversary and deterring future aggression. The old image of sea power - war fighting, deterrence, and power projection - increasingly has to adapt to the execution of good order tasks that require interdependence and integration. Interdependence between nation-states is vital to enhancing maritime security, protecting the marine environment and its resources, and providing humanitarian assistance both at home and on distant shores. The Proliferation Security Initiative,

Seapower: Defining the Ocean Future

and uphold international law.¹⁶ The make up of navies follows on from this different image of sea power, the *durée* of day-to-day experience and the need for cooperation in policing the maritime commons.

FORCE STRUCTURES

How are nations then facing up to the challenge of *day and night* constabulary tasks, *of and on* diplomatic missions, and the *once in a blue moon* military operation? An analysis of Jane's Fighting Ships 2005 reveals that development of maritime forces in the 21st century can be categorised into three groups. The first and the largest group comprises 125 of the 168 nations/overseas territories that are developing a single maritime force for employment of force across the span of maritime operations. This group includes nations like Brazil, Portugal, South Africa, Iran, Nigeria, New Zealand, North Korea, Mexico, and Israel.

The second group comprises nations that are developing two independent maritime forces. A navy for military operations and a coast guard for constabulary tasks, while both capable of varied diplomatic missions. This group of nations has the most complex relationship between maritime forces and involves high defence expenditures. Of these, in all probability, only the United States (US) and Japan have the industrial capacity, national infrastructure, and financial resources to build a separate navy and coast guard. Even here, some argue that the US can no longer afford a bifurcated approach to maritime security.¹⁷ Other nations like Malaysia are in the process of establishing a new maritime enforcement agency akin to a coast guard¹⁸ or like India attempting to follow the US example investing heavily in an existing coast guard, because navies by policy and tradition

are unwilling to restructure for good order tasks at sea. What is often overlooked by nations like India is that the US Coast Guard (USCG) as the first line of defence in the country's fight against maritime terrorism is more powerful than most navies in the world. The projections of the Indian Coast Guard (INCG) under its development plan 2002-2007 have not been cleared by the Indian Finance ministry due to budget constraints.¹⁹ What will hurt India's maritime security environment even more is the plan to create a new marine police.^{20 21} To build a third maritime force under the Ministry of Home Affairs could create problems, amongst others, of command and control at sea and coordination of assets. Rightly, the INCG currently operating under the Ministry of Defence should be made effective in policing India's territorial waters in addition to other maritime security functions.

The third group, consists of those nation states that are building a combat-ready navy and one or more agencies with limited capability supported by the navy for the specialised missions, such as, search and rescue, fisheries protection, customs, fiscal and immigration patrol, pollution control, and waterfront security of infrastructure along the coast. Here again there are familiar problems of command and control at sea, coordination of assets, duplication of effort and cost effectiveness of forces. This group includes nations like the UK, France, China, Russia, Germany, Canada, Spain, Italy, and Australia.

21ST CENTURY NAVIES

So how do nations

Do nations adopt Malaysia's approach and make the transition from a single maritime force to developing two maritime forces

address the calculus of force sizing in building a 21st century navy? Do nations adopt Malaysia's approach and make the transition from a single maritime force to developing two maritime forces. But then, nations like India with a navy and coast guard are moving towards developing a third marine police force. Even a nation like Australia with multiple agencies for securing its maritime borders is politically divided on building a new coast guard. There are no easy answers and every nation is confronted with the challenge of defining the force structure and building its 21st century navy.

What is emergent is that every maritime nation needs a maritime force to *guard its coast*. A *coast guard* is one that is capable of taking on the *durée* of day-to-day experience and even the few and far between tasks in the life span of a ship across the constabulary, diplomatic, and military functions. Sam Bateman rightly argues in favour of a coast guard as a cost-effective alternative to high-value military aircraft and warships fitted with high-technology weapons and sensors.²² Besides, the development of white hull coast guards as compared to grey hull navies is seen as a softer and more easily acceptable option for international cooperation.²³ Using Eric

Sea Control Maritime Force Structure and Capabilities

	Durée of day-to-day experience	Life span of a ship	Longue durée of the navy	
	Environmental and Resource Management Environmental and Resource protection Quasi-military Operations Prevention of illegal immigration Drug interdiction Anti-piracy operations Fisheries, Defence Force Assistance to the Civil community Search and Rescue Defence Force Assistance to Allied and Friendly Navies	SUPPORT Peace Building Peace Keeping Peace Enforcement Services Assisted Evacuation Services Protected Evacuation Coercion	FORCE Defence Aid to the Civil Power Disaster Relief	Constabulary
STRIKE FORCE	Intelligence Collection and Surveillance Naval Control of Shipping	Cover Containment by Distractors Barrier Operations Layered Defence	Against Shipping Maritime Strike Advanced Force Operations Maritime Mobility Land Strike Amphibious Operations Support to operations on Land	Diplomatic
	DEFENCE FORCE			Military

Grove's ranking of navies²⁴ as an aid to classification, token and constabulary navies need to strengthen individual capacity to build a localised capability for securing the EEZ. The concept of one maritime force also serves territorial defence and adjacent force projection navies, which may add advanced capabilities for sea denial in the *longue durée* of the navy.

What choice do great powers and medium powers have, which posses a global force projection navy or a regional force projection navy? These combat-ready navies have large inventories of high-value warships, submarines, and aircraft and are confronted with making a difficult choice of whether to build an independent coast guard or integrate coast guard functions within the navy. The choice for the US is easy enough. The operating environments for the USN and USCG are very independent. A global force projection navy and an independent coast guard for homeland security are probably the most cost effective way to secure American interests. Japan may not need a global force projection navy, but has the financial capacity to build two maritime forces. For very different reasons both countries cannot be emulated by other nations. So what do sea control navies like Australia and India do faced with constraints of defence budgets, manpower, industrial capacity, and national infrastructure? The table shows that one option to build a cost effective 21st century navy is to integrate all existing forces into a composite force structure comprising strike, defence, and support forces with designed capabilities to employ force across the temporality matrix of maritime operations. It could facilitate optimum utilisation of assets, economies of scale, response effectiveness, and greater operational efficiency by overcoming issues of dual

responsibility, command and control at sea, coordination of assets, and duplication of effort inherent when more than one national maritime force is operating within the same geographic space.

DEFINING THE FUTURE

So what is the future image of sea power and how is the 21st century navy to be structured? Three-fourths of the independent states are maritime nations. Every nation is challenged by a series of transnational threats, including, piracy, organized crime, illegal immigration, and drug trafficking that needs a maritime force to safeguard resources within the EEZ, protect vital trade, and secure maritime borders. In so doing, the lethal warfighting image of sea power must adapt to include the *power to govern the sea*. Moreover, to be effective across the multitude of missions will require international navies to become more interoperable and be willing to collectively wield sea power in policing the maritime commons. In the course of history many nations have maintained large armies, but those that have built and provided for large navies are only ten or even fewer.²⁵ But now every maritime nation will need to build a large enough maritime force/s to guard its coast. Medium powers are faced with a difficult choice between building an independent coast guard and empowering a combat-ready regional force projection navy to perform coast guard functions. Given the constraints of defence budgets, manpower, industrial capacity and national infrastructure, it may be pragmatic to build strike, defence and support forces within a composite force structure. Performing *day and night* constabulary tasks and *of and on* diplomatic missions will only prove to be an added advantage in the combat readiness of a sea control navy

So what is the future image of sea power and how is the 21st century navy to be structured?

for the *once in a blue moon* military operation. ✎

ACKNOWLEDGEMENTS

I would like to acknowledge Jack McCaffrie for his critical observations to an initial formulation on sea power, and James Goldrick and Andrew Forbes for their astute comments on the paper.

ABOUT THE AUTHOR

Manoj Gupta is a former submarine Commander in the Indian Navy and now a research fellow in the University of New South Wales at the Australian Defence Force Academy in Canberra. His current research interests include Indian Ocean maritime affairs, regional maritime security, and maritime cooperation. His published work includes a book titled *Maritime Affairs: Integrated Management for India*. He can be reached at m.gupta@adfa.edu.au.

(Endnotes)

¹ 'CNO calls for New Definition of Sea Power', *Navy Newsstand*, 6 September, 2005, viewed on 07 September 2005, <http://www.news.navy.mil/search/display.asp?story_id=19924>.

² Geoffrey Till, *Sea Power A Guide for the Twenty-First Century* (London: Frank Cass, 2004).

³ Manoj Gupta, 'Maritime Affairs Integrated Management for India' (New Delhi, Manas Publishers, 2005).

⁴ US Department of State, 'Shared Oceans, Shared Issues', *Global Issues*, An Electronic Journal, vol. 9 number 1, April 2004.

⁵ United Nations Division for Ocean Affairs and the Law of the Sea, Preamble to the United Nations Convention on Law of the Sea, viewed on 14 November 2005, <http://www.un.org/depts/los/convention_agreements/texts/unclos/closindx.htm>

⁶ 'Navy-Coast Guard National Fleet Policy Updated', *Navy Newsstand*, 03 March, 2006 viewed on 21 March 2006, <http://www.news.navy.mil/search/display.asp?story_id=22645> and 'National Fleet: A joint Navy/Coast Guard Policy Statement', viewed on 21 March 2006, <http://www.navy.mil/palib/cno/2006_national_fleet_policy.pdf>

Seapower: Defining the Ocean Future

⁷ Vice Admiral John G. Morgan Jr. and Rear Admiral Charles W. Martoglio, 'The 1,000 Ship Navy: Global Maritime Network', *United States Naval Institute, Proceedings*, November 2005.

⁸ Australian Maritime Doctrine (RAN Doctrine 1), 2000, p. 55.

⁹ Ken Booth, *Navies and Foreign Policy* (London: Croom Helm, 1977)

¹⁰ AMD, *op. cit.*, p. 55.

¹¹ Eric Grove, *The Future of Sea Power* (London: Routledge, 1990)

¹² Anthony Giddens, *The Constitution of Society: Outline of the Theory of Structuration* (Cambridge: Polity Press, 1984)

¹³ Sea Power Centre Australia, 2005, Database of Royal Australian Navy Operations, 1990-2005 Working Paper No. 18.

¹⁴ *Ibid.*

¹⁵ Commodore James Goldrick, 'Sovereignty and the Patagonian Toothfish' in 'Sovereignty at Sea: From Westphalia to Madrid', edited by R.A. Herr, Wollongong Papers on Maritime Policy No 11, p. 167, (University of Wollongong: Centre for Maritime Policy, 2000).

¹⁶ Keesings Record of World Events 1998.

¹⁷ Bruce B. Stubbs, 'Smarter Security for Smaller Budgets', *United States Naval Institute, Proceedings*, vol. 131, issue. 8, p. 37, Aug 2005.

¹⁸ Ministry of Foreign Affairs Malaysia, 'Remarks by Deputy Prime Minister and Minister of Defence Yab Dato' Seri Najib Tun Razak', 2005 Shangri-la dialogue Singapore, 06 June 2005, viewed on 15 November 2005, <<http://domino.kln.gov.my/kln/statemen.nsf/04649e3a2607b599648257018000a9dd5?OpenDocument>>

¹⁹ Government of India Press Information Bureau, 'Defence Minister addresses Coast Guard Commanders Conference', 09 November 2005, viewed on 15 November 2005, <<http://pib.nic.in/release/release.asp?relid=4805>>

²⁰ Government of India Ministry of Defence, 'Report of the Group of Ministers on National Security-Border Management Chapter V, p. 72 Para 5.58', viewed on 15 November 2005, <<http://mod.nic.in/newadditions/chapter-v.pdf>>

²¹ 'Set up marine police to protect coastline', *Indian Express*, 07 September 2005.

²² Sam Bateman, 'Coast Guards: New Forces for Regional Order and Security', Analysis from the east West Center No. 65, p. 7,

January 2003, viewed on 17 November 2005, <<http://www.eastwestcenter.org/stored/pdfs/api065.pdf>>

²³ *Ibid.*, p. 3.

²⁴ Eric Grove, *op. cit.*, p. 236-240.

²⁵ Colin S. Gray and Roger W. Barnett, *Sea Power and Strategy* (Annapolis: US Naval Institute Press, 1989)

*Australian's designing world class military systems ...
our track record proves it!*

Saab Systems

delivering exceptional systems solutions

take
command

you're in
control



SAAB

Saab Systems Pty Ltd

Fourth Avenue, Technology Park, Mawson Lakes SA 5095
www.saabsystems.com.au



An Aurora in Antarctica

MIDN BARTON HARRINGTON, RAN

When the opportunity of spending time onboard *Aurora Australis* was presented to me I did not need much time to think it over. I jumped at the chance. I was offered a paid trip to the Antarctic with the prospect of stepping foot on the continent - a real chance to "expand my horizons." The voyage was a scientific research project run by the Australian Antarctic Division in conjunction with a number of other organizations such as universities and the CSIRO.

Dubbed BROKE West, the voyage was two and a half months in duration departing from Fremantle on the 2nd of January 2006 and returning to Hobart on the 12th of March. BROKE is an acronym for Boundary Research into Oceanography, Krill and the Environment. West is a reference to the relative position of the voyage to the original BROKE conducted in the late 1990s.

Walking up the gangway of *Aurora Australis* on New Year's Day I had many thoughts about what the next ten weeks might bring me. I had many uncertainties in my mind. I knew only a small amount about the Australian Antarctic Division (AAD) and the other organizers of the expedition, I had never set foot on a merchant ship before, nor had I been at sea for such an extended period. Once onboard I quickly found my cabin. It was quite luxurious with an en-suite and only four bunks. On top of this only two of them would be used until the last two weeks of the voyage.

There was much to do before departing Fremantle. The crew had to undertake the usual pre-departure preparations. The expeditioners including me and all support staff and scientists spent the morning of the 2nd of January attending induction lectures

on OH&S, environmental issues, ship safety, and the like. The expeditioners were also told where their emergency muster stations were, how to put on an immersion suit (a hardcore wetsuit designed for cold climates) and how to enter a lifeboat.

We then had to clear customs before departure. This was fairly straight forward except for completing the box on the departure form asking 'which country will you be spending most of your time abroad in?' Was it Australia? Or Antarctica? But Antarctica isn't a country really, is it? The customs officials were very helpful in this micro-dilemma and we all got through customs without any real problems.

We departed Berth E on Victoria Quay Road Fremantle on the 2nd of January 2006 with 83 people embarked. This included the 23 P&O crew and 60 expeditioners who were to conduct the huge array of scientific work over the next ten weeks. There was a modest amount of media attention as we left,

with a news van at the wharf and a news helicopter escorting *Aurora Australis* out to sea. In addition to this, a small group of loved ones had gathered to have one final glimpse of departing family and friends.

From Fremantle *Aurora Australis* turned south west towards the area where we were to conduct the marine science research. This part of the journey took the ship through the Roaring Forties and down past the Antarctic Circle. For my first experience of the Roaring Forties I was quite disappointed. Having never been



When the opportunity of spending time onboard Aurora Australis was presented to me I did not need much time to think it over

An Aurora in Antarctica

Antarctica

at sea during rough weather I was keen to see what this famous stretch of water had to offer. I'd seen photos of what the sea could throw at a ship when it wanted, and was expecting some really rough weather.

However, as *Aurora Australis* passed south the weather remained fine and the ocean behaved itself. I explained my desire to see a really big storm to one of the OOWs who promptly made clear his even stronger desire for the ocean to remain calm. In the end the passage through the roaring forties was relatively uneventful with the only the odd moderate swell - much to the satisfaction of the crew.

BROKE WEST

For the first week or so, during the south easterly transit, there was not a great deal for most of the expeditioners to do. We spent our time getting to know our way around the ship, which included a compulsory ship induction questionnaire. It was also an opportunity for the heads of each research project to fine tune details and to conduct some training on various pieces of equipment.

Work began in earnest after ten days when *Aurora Australis* reached the starting point of the first of twelve legs. This was approximately 400 NM north of Antarctica at longitude 80 degrees east. The legs were a series of 'race tracks' which would be followed for the majority of the voyage.

Eleven of the twelve legs were in an alternating north and south direction with the twelfth, and first, heading east. This first leg, ironically named 'Leg Twelve', passed along the top of the other legs in a westerly direction. As *Aurora Australis* moved along Leg Twelve she stopped periodically and lowered a series of instruments collectively known as a CTD (Conductivity, Temperature, Depth). Each CTD station on Leg Twelve was

approximately 40 NM apart.

The CTD was lowered to a targeted depth of 10m above the sea floor; however with the roll of the ship it was difficult to achieve the desired depth precisely. As the CTD is recovered it was stopped a number of times to collect water samples. These samples were measured for salinity, oxygen content and nutrients. The samples provide a wealth of information to oceanographers and other scientists which they then use in their research into ocean currents, global warming, and biological and chemical analysis.

The CTD stations governed *Aurora Australis*' track during Broke West. Leg one (the second leg) was due south down 30 degrees east longitude. Leg two (the third leg) was due north up 35 degrees east. The ship followed this pattern of southern tracks down 40, 50, 60, 70 and 80 degrees east and northern legs up 45, 55, 65, 75 degrees east. There were just over 100 stations in all, including a practice one and a couple of 'surprise' ones towards the end of the voyage.

At every second CTD station the

biologists conducted a 'scheduled trawl' to measure the abundance of krill in that area. This was the other major data collection carried out during Broke West. I did not realize prior to embarking on the voyage the importance of krill in the food chain. Many of the animals that live in southern waters either directly feed on or eat something that in turn eats krill. Additionally, krill is fished in Antarctic Waters to feed fish stocks elsewhere. Knowing krill abundance allows sustainable fishing targets of the krill to be set, thus ensuring the survival of this critical link in the food chain.

The krill biologists used acoustic instruments to determine what marine life was around the ship, with a particular focus on krill. If large concentrations were found, a 'target trawl' would be conducted and consequently large amounts of krill would usually be brought onboard to be used in a variety of experiments.

MY PERSONAL EXPERIENCES ON AURORA AUSTRALIS

Soon after joining *Aurora Australis* I was asked by the voyage leader,

I explained my desire to see a really big storm to one of the OOWs who promptly made clear his even stronger desire for the ocean to remain calm!



who was the head expeditioner and responsible for the science on the voyage, what I wanted to achieve from being part of BROKE West. I explained to him that I wished to learn about what the AAD does and also how a merchant ship runs. As a result I was asked if I would work with the oceanographers deploying the CTD and sampling from it. I was also able to arrange with the master of *Aurora Australis* to understudy on the bridge for one watch per day.

In the time I spent with the oceanographers I would help with one twelve hour shift each day. This would begin at 0001 and run through until midday. The number of CTDs that were deployed and sampled depended on the depth of the ocean during a shift. If the water was shallow, up to four CTDs might be deployed and sampled in one shift. When traversing over deeper water one and half deployments might be completed before handing over to the other shift.

After my shift with the oceanographers ended I would proceed to the bridge for the afternoon watch. What I did on the bridge depended on the environmental conditions and scientific operations going on at the time. For example, if the CTD was deployed I would often control the 'Lipstick'. This is the central control for all of *Aurora Australis*' thrusters (a bow thruster and two stern thrusters) which allows the ship to maintain a set heading while moving slowly in any direction. The ability to do this is important as the CTD wire had to be kept 'up and down' or there was a good risk of the wire snapping with the undesired consequence of losing the CTD - a very expensive set of instruments.

During the northward leg of BROKE West the CTD was not deployed. This gave me an opportunity to get a look at other parts of the ship. I



made a particular effort to spend time in the machinery spaces. On a typical day I would be teamed up with one of the engineers and assist them in their work. This gave me an understanding of what the engineers did from day to day and built on my elementary knowledge on marine engines.

MAWSON

After six weeks at sea *Aurora Australis* made her first of two stops on the continent. This was at Mawson Station, located 67°36'S, 62°53'E. Mawson, operated by the AAD, was established in 1954 and is the oldest continually operated base in Antarctica. A wide variety of scientific research is conducted at the base including, but not limited to magnetic, biological and meteorological studies.

The purpose of *Aurora Australis*'s visit to Mawson was to pick up several workers who were returning to Australia after an extended period on the continent, and to calibrate some of the ship instruments. Those personnel not required for the calibration were free to go ashore. Some of the luckier members of *Aurora Australis*'s

contingent, including myself, were able to stay ashore overnight.

Upon stepping foot on Antarctica for the first time I was taken aback by its beauty on one hand and the sense of nothingness on the other. Mawson is located on one of the few rocky outcrops that Antarctica has to offer, home also to plenty of seal, penguins and other birdlife. As a land form Mawson is a massive icecap which covers the majority of the Antarctic landmass. In close proximity are glaciers stretching out to sea. All these things provide the short time visitor with plenty of photo opportunities.

When I took a step back for my initial impressions I was struck by a few arguments that made me think Antarctica was a great place to visit - but perhaps not an ideal place to spend an extended amount of time. For example, there was no vegetation at all - just ice, water and rock. This really gave me the feeling that I was at the bottom of the Earth. I was also surprised when one of our number - an Englishwoman - explained how much she was enjoying the weather. "Just like a winter's day back home", she said.

Mawson, operated by the AAD, was established in 1954 and is the oldest continually operated base in Antarctica

An Aurora in Antarctica

Antarctica

That might be so, but at the time it was the middle of summer!

Once those of us going ashore for the night had found our rooms, we were treated to some great hospitality. Within half an hour I had a 'Mawson Special' homebrew in my hand, as did most of us. After six weeks on a dry ship this was more than welcome. However, before we could get too settled we were taken on a tour of the station. This tour contained a few surprises - for me at any rate. Two of these were the fire station, with a fire truck on tracks, and the post office.

After the tour it was still light enough to walk around Mawson to have a closer look at the buildings and the wildlife. I was able to get within metres of the seals and penguins for what turned out to be some great photo shots.

After a couple of hours of wandering around the base most of the visitors had returned to the living quarters for some dinner and a few social drinks. The evening provided everyone with a great opportunity to let their hair down and relax after so long at sea. The next morning everyone returned to the ship for a shower and change of clothes and most returned that afternoon for one final stretch of their legs.

After only one night in the tiny Mawson harbour *Aurora Australis* departed to continue her scientific work for a further four weeks. Big thank-yous went out, and continue to do so to our hosts at Mawson.

INSIDE AN ICEBERG

In the ten weeks I was in *Aurora Australis* I left the ship three times: twice at Mawson and once at Davis Station. This third respite from the confines of the ship was as unique as the other two. During it, however, I did not even step foot on land. Instead the *Aurora Australis*' crew launched one of

the ship's boats and took some of us for a ride out to one of the many icebergs surrounding the entrance to Davis.

I had been at sea for over eight weeks by this stage; seven of which had been in Antarctic waters. I had seen hundreds if not thousands of icebergs, but had not touched one. This was to be my lucky day. A horse shoe shaped one had been found and its shape allowed the little boat to manoeuvre inside the U. "Fantastic!" That was the first of many descriptive words that popped into my head. Incredible, beautiful and amazing were others - all words that by this stage had been uttered countless times but seemed to take on stronger meaning in this case.

We were able to take some great up-close photos of the iceberg and they have come out splendidly. Moving inside the iceberg also allowed us to break pieces off and eat them. They tasted surprisingly fresh, with little salt content. The trip to the iceberg took less than 45 minutes. On return to the ship many excited stories were exchanged with those who had already been on earlier trips. This short jolly was one of the biggest highlights of a

voyage that was full of highlights, and beautiful and incredible things to see.

SOCIALISING

During the deployment there were a number of social events held. Reasons included birthdays, farewells (for those being left to winter at Davis Station), and just to keep up spirits. The latter included events like quiz nights, a visit from King Neptune and Australia Day celebrations.

King Neptune visited *Aurora Australis* in the final weeks of the voyage. Every soul onboard that had crossed 60 degrees south for the first time was required to pay homage. This, of course, included me. I was forced to my knees and told to kiss a rather large fish hanging from the King's belt. This was followed by some quick marks of respect to Neptune's wife, a vegemite moustache and a shower in some rather sloppy kitchen concoction. From speaking with the more experienced members of *Aurora Australis*'s crew I believe that I was let off lightly by King Neptune - "things could have been much worse."

Australia Day were another

I believe that I was let off lightly by King Neptune - "things could have been much worse"



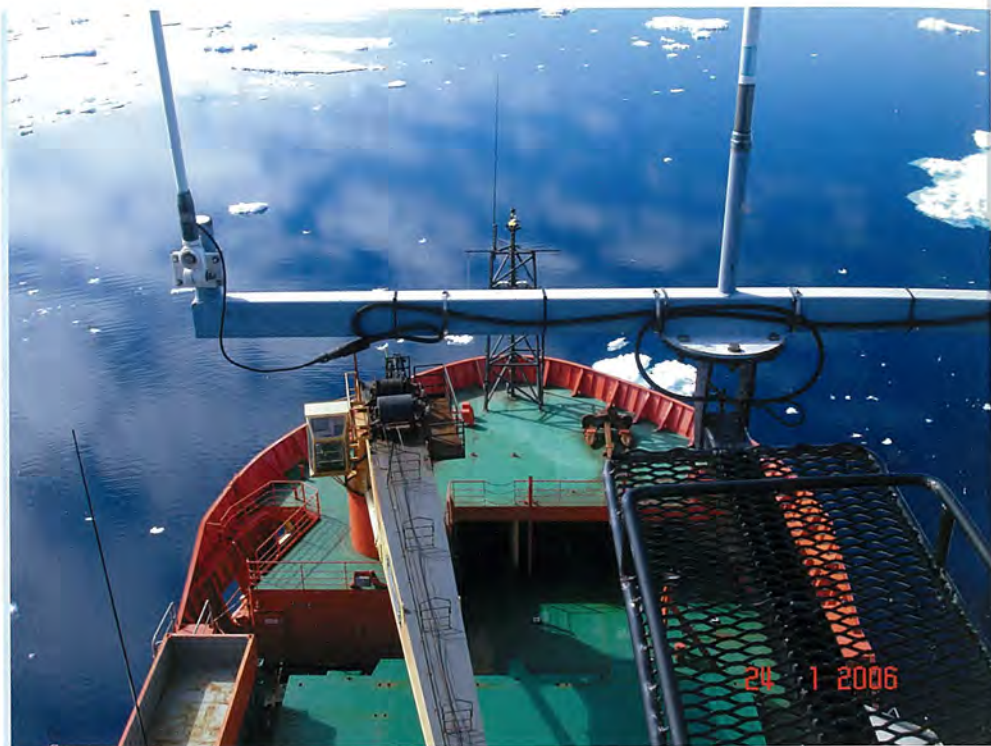
memorable day. Games included a pie eating competition, bobbing for fruit in a 'special' mixture courtesy of the chefs, and tug-o-war. In the afternoon, money was raised for Camp Quality, a charity that the crew of *Aurora Australis* has been supporting for many years. This was done through people sponsoring volunteers to shave their hair off. Being a member of the military I was not able to raise more than \$50, however I was happy to contribute whatever I could to this worthy cause. Some of the scientists had much greater success with sponsorship. One man in particular whose hair style and matching beard could be best described as stereotypically 'caveman' in appearance raised over \$1000. These activities all helped to make the day very special.

It should be mentioned that through the hard work of several members of *Aurora Australis's* crew over the last 15 years hundreds of thousands of dollars have been raised for Camp Quality, quite an impressive and selfless effort.

THE RETURN TRIP

The departure from Davis Station at the beginning of March meant the final leg of Broke West had commenced. By this stage we had been at sea for over two months and everyone was looking forward to getting home. This final leg was a straight forward traverse across the Southern Ocean to Hobart with only a small number of stops for data collection.

At Davis Station *Aurora Australis* had picked up approximately 40 extra people for the passage home to Hobart. Most of these people had spent the summer on the Antarctic Continent and were as keen as those already on the ship to get home, if not more so. The new arrivals meant the number embarked was raised by almost 50%. This led to the expected long lines at dinner and a generally more crowded



ship. However, the new faces did give everyone a chance to interact with different people. There was an 'us' and 'them' mentality for a few days before social functions were held. They were remarkable in the manner they broke the ice between the two groups. I was surprised at the effect that a simple quiz night could have in bringing two separate groups together.

The final two weeks were, for me, the longest. As there were no more CTDs I was virtually redundant, having lost my daily 12 hour shift. I found some gainful employment with the ship's company doing jobs such as safety checks on survival equipment and other odd jobs around the ship for the 1st Mate. This couple of weeks really demonstrated to me the need to keep busy while at sea.

This was a practical example of a story I remember a Chief once telling me. He had kept his sailors very busy during a Gulf deployment and on arriving home one of his sailors asked him why he had worked them so hard: he responded 'Yeah I did, but didn't the time fly.'

DRAWING ON MY EXPERIENCES

When looking back at my experiences onboard *Aurora Australis* I recognise how lucky I was to be part of survey that was BROKE West. The time spent in Antarctica will be something that I shall never forget. I was able to participate in a maritime endeavor that was, in many ways, quite foreign to what I have experienced in my short time in the Navy. I believe that this experience will serve me well in the future through having shown me alternative ways a ship can operate. It also provided me with new insights into why the NBavy does things the way it does.

One example of differing practices was during the pilotage out of Mawson. The Master and 2nd Mate conducted the pilotage without a helmsman or any other personnel on the bridge, using few visual fixes, instead relying on radar fixes, head-marks and GPS, and without a cable party. I do not suggest for a moment that this would be appropriate for a naval vessel, but I now have seen an effective pilotage conducted in an alternate way - something that can only be of benefit

This final leg was a straight forward traverse across the Southern Ocean to Hobart with only a small number of stops for data collection

An Aurora in Antarctica

Antarctica

to me as a trainee seaman officer.

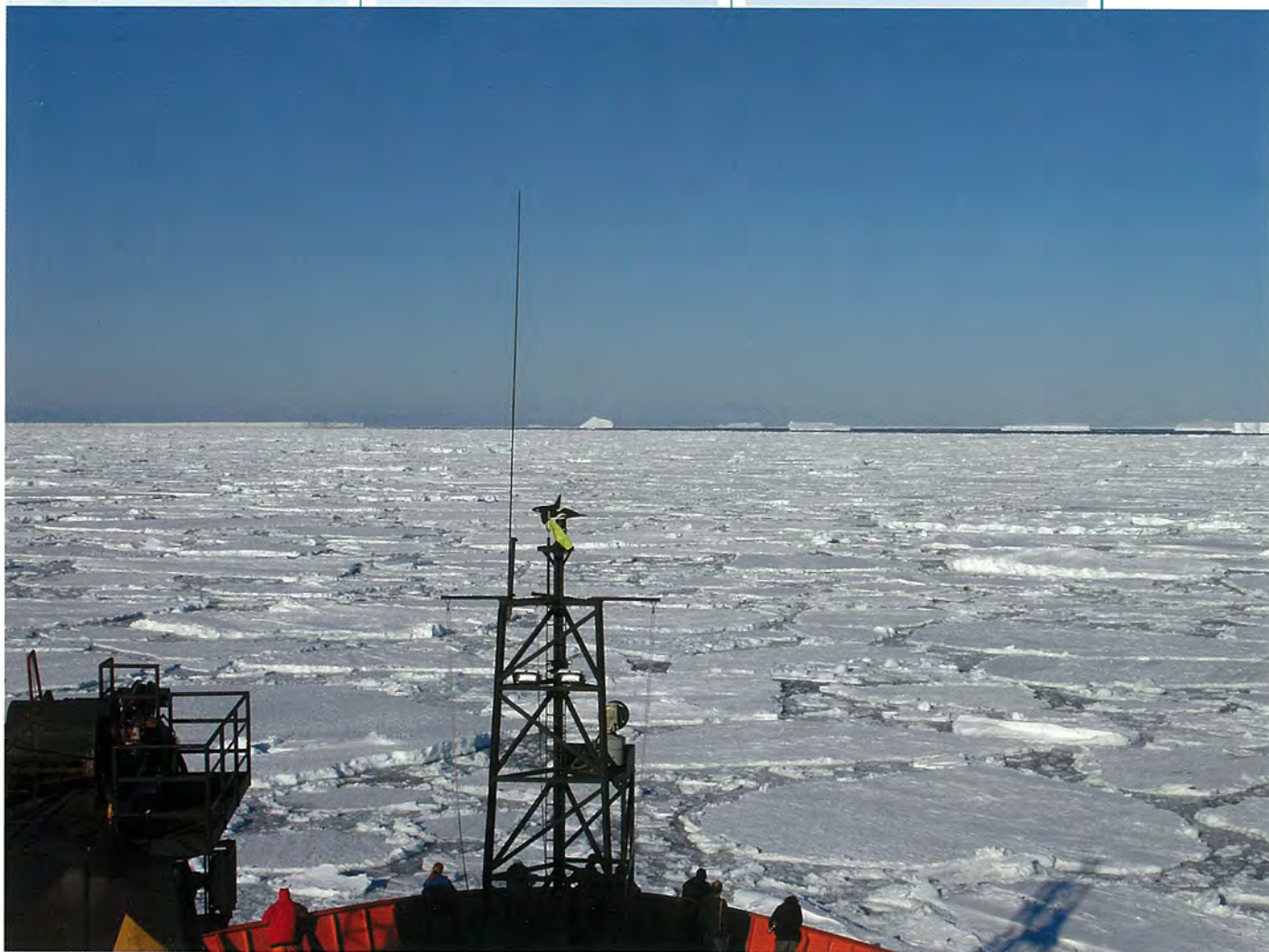
As far as appreciating the Navy's methods I now have a much better understanding of the importance Navy places on damage control. Clear chains of command with every person assigned a specific job, and continuous drilling of that job make for extremely effective teams. This was not as evident on *Aurora Australis*. This is not to say the crew was not highly professional - they were. Indeed, the ship has suffered two major engine room fires over the years, both of which were dealt with in a timely and efficient manner with no loss of life or serious injury.

I was extremely lucky to become involved with BROKE West. It was a great personal and professional experience. I have come away with memories that I will never forget

and many photos of landscapes and seascapes that are nothing short of spectacular. Everyone I worked with on *Aurora Australis* both directly and indirectly was able to teach me something either about the maritime environment, or the AAD and its work in Antarctica. I hope that in the future other opportunities to experience unique maritime settings will be pursued and made available to other members of the RAN.

Finally I would like to sincerely thank all those who made my

participation in the voyage possible. This includes the staff at ADFA, the ADD and P & O Polar. 🚢



Raytheon

Australia

Customer Success Is Our Mission



1800 RAYTHEON www.raytheon.com.au

CANBERRA
ADELAIDE
BRISBANE
MELBOURNE
PERTH
SYDNEY

HMAS *Stuart* - Slipper ROTATION 8

BY CAPTAIN PHIL SPEDDING, RAN

On the evening of 24 April 2004, three near concurrent suicide boat attacks were made against the Kwahr Al Amaya (KAAOT) and Al Basra (ABOT) oil terminals in the Northern Arabian Gulf (NAG). Coalition forces under *Stuart's* control disrupted the coordinated attack and prevented catastrophic damage to the terminals, however a US Navy boarding party from *USS Firebolt* that intercepted one of the boats sustained multiple, serious casualties.

The incident was probably the first time that most onboard *Stuart* were confronted with real danger, fear, injury and death. However, the officers and Ship's company responded in a most professional manner, and dealt effectively with the challenges of that night, and the days and months that followed. The purpose of this short article is to reflect upon *Stuart's* involvement in the incident, which was the defining aspect of Operation SLIPPER Rotation 8.

ARRIVAL IN THE GULF

Stuart started the workup process for Operations CATALYST/SLIPPER in January 2004, and benefited from the accumulated knowledge of some 15 years of RAN Gulf Operations. After a number of inevitable challenges, we arrived on station in the NAG on 14 April. That day my Operations Team received an INCHOP brief from the NAG Maritime Security Operations (MSO) Commander, CO *USS Yorktown*, and I admit to being somewhat surprised when I was told that MSO duties would be passed to *Stuart* the following morning!

As MSO Commander, the main responsibility was to defend the Iraqi offshore oil facilities, KAAOT and ABOT. These two terminals supply around 1.8 million barrels of oil per day, the revenue from which is vital

to national reconstruction efforts. Additional requirements were the defence of coalition shipping, and the maintenance of Sea Control in the NAG and approaches to the two key waterways – the SAA (Shatt Al Arab) and KAA (Kwahr Abd Allah). Sea Control included the gathering of maritime intelligence, and prevention of the movement of prohibited cargoes. This was achieved through a comprehensive yet flexible boarding regime, targeting merchant shipping and dhows.

The Task Group (TG) assigned to the MSO Commander normally consisted of one or two Major Fleet Units (RAN, RN or USN), and two or three USN or USCG patrol boats. On 24 April I had stationed *Stuart* and *USS Firebolt* as the ABOT and KAAOT guard ships respectively. To assist with the Sea Control task, *USCGC Wrangel* was stationed in the approaches of the KAA, and *USS Yorktown* in the deeper water to the South West of ABOT. Of note, *Firebolt* had unexpectedly joined the Task Group early on 24 April when a programmed escort task had been cancelled. Had she not joined, *Stuart* would have been patrolling near KAAOT overnight.

A 'security' zone had been established around each of the terminals, and the guard ships were kept very busy escorting numerous fishing and cargo dhows that attempted to transit through their zones. Ship's boats were regularly launched to investigate and warn-off the dhow crews, the intent being to inform and educate the Masters about the establishment of the zones.

Overnight on 23 April, a concentrated boarding program had been conducted against dhow traffic, with *Stuart* boarding some 36 and querying many others. Nothing significant was discovered and

boarding and query operations continued without incident throughout the daylight hours of 24 April.

THE ATTACKS OF 24 APRIL

Just on dusk

(about 1914

local), the lookouts advised the on-watch PWO of smoke in the general direction of KAAOT. After being called, I proceeded to the bridge and could clearly see the reported smoke. However, I had no further information available and suspected that a fishing dhow or other small craft had suffered some form of mishap, something which we had seen before, and were to witness on a number of further occasions. *Stuart* was conducting Engineering Casualty Control Drills (ECCDs) and these were cancelled as a precaution, and the Engineering team restored propulsion in extremely quick time.

Sunset was at 1917 and shortly thereafter we received a frantic report via VHF that a fishing dhow had exploded whilst *Firebolt's* RHIB was alongside. The RHIB had capsized and six personnel were reported to be in the water (this was later amended to seven). I directed the OOW to close *Firebolt's* position at best speed, for at this stage I was still unsure of what had really happened, and was focussed on providing assistance to *Firebolt* over four miles away.

Stuart's aircraft was airborne conducting surface search, and was some six miles from *Firebolt*. The aircraft was directed to close and to assist with the location and recovery of personnel, and was the first asset to arrive at the scene.



CAPT Phil Spedding, RAN

The incident was probably the first time that most onboard Stuart were confronted with real danger, fear, injury and death.



HMAS Stuart

HMAS Stuart - Slipper ROTATION 8



Stuart-Blue
Light Patrol

The aircrew witnessed a scene of considerable confusion. Through their searchlights, they could see personnel struggling in the water amongst oil and large amounts of debris. *Firebolt* had only been about 400 yards away from her RHIB when the dhow exploded, and was now attempting to recover her personnel with lifelines and any other means available. Flares and searchlights added to the confused scene.

The aircrew initially attempted the rescue of a survivor who they could see had significant head injuries, but the casualty was unable to don the rescue strop for a winch recovery. With the survivor holding onto the strop, an attempt was made to drag him to *Firebolt*; however he was too weak to maintain a grip. Fearing imminent drowning, the decision was made to deploy the Sensor Operator (SENSO) into the water via a diver drop profile. The SENSO subsequently kept the survivor afloat until our RHIB arrived on scene. The RHIB crew then assisted with the recovery and transfer of casualties to *Firebolt* for initial treatment.

Whilst this rescue was being affected, a large explosion occurred in the vicinity of ABOT. On the bridge wing we first saw the smoke, then

heard the loud blast and felt the heat on our faces. Distant small arms fire could be heard. It was at this point that I finally realised a coordinated attack of some sort was in progress, and was immediately conscious of how exposed both oil terminals were. *Yorktown* was ordered to close ABOT at best speed, and I decided to remain in *Firebolt's* position so that *Stuart* support her and also provide protection for KAAOT.

Stuart was brought to Action Stations and the surface warning was raised to RED. I left the bridge for the Operations room, where I believed I could exercise more effective control of the situation. The XO and Navigator, both experienced and capable, remained on the bridge.

Six minutes later, a second large explosion was observed in the vicinity of ABOT. As additional protection for the terminals, *Wrangel* was also ordered to close ABOT, although she was some 20 miles distant.

At 2007 *Stuart* received her RHIB alongside, transferring the first three casualties. Two of these were serious trauma cases with multiple injuries. The third had ceased breathing on initial recovery to *Firebolt*, but EAR, then CPR had been commenced. *Stuart* sailors had continued CPR

Six minutes later, a second large explosion was observed in the vicinity of ABOT

during the RHIB transfer, but the patient was declared dead on arrival by *Stuart's* Medical Officer (MO). The RHIB returned to *Firebolt* on a number of occasions, transferring equipment, casualties, and one sailor who was pronounced dead by *Firebolt's* medic. The RHIB crew was not stood down until approximately 2200.

At 2020 *Stuart's* aircraft conducted a medivac, via stretcher lift from *Firebolt's* focsle, of a critically injured sailor. He was brought onboard, assessed and stabilised by the MO and her team, and eventually transferred ashore to Kuwait. The aircrew had to contend with a change in destination mid flight, a severe dust storm whilst on the ground, and deteriorating weather and visibility enroute to the Ship, before they were finally recovered and stood down for tasking the following day. Sadly the patient was to die in hospital.

By around 2030, a clearer picture of what had happened at ABOT finally emerged. One of the tankers alongside reported that two small speedboats (approx 14 feet in length) had closed the terminals at high speed, coming under fire from the Iraqi security detail as they closed. Both boats had exploded prior to reaching the terminal, thus preventing any significant damage. Clearly, the fatal dhow explosion had been the trigger for the subsequent attacks against ABOT.

With *Yorktown* and *Wrangel* on station, and no further attacks forthcoming, by about 2230 I felt I could reduce the surface warning to YELLOW. *Stuart* remained at Action Stations until all of *Firebolt's* casualties were finally evacuated ashore. Two medivac aircraft from the carrier *USS George Washington* were provided, and the final casualties departed the ship by 0054 on the 25th. I fell *Stuart* out from Action Stations shortly thereafter.

We subsequently learned that a total of three USN and USCG personnel died from their wounds, and the remaining four were evacuated home for long term care and recovery. A number of days later, an explosive filled dhow was discovered drifting in the Gulf – thankfully an unutilised element of the attack.

COMMAND CONSIDERATIONS

The incident was a challenge for me in command. Throughout I was conscious of the need to balance the demands of Task Group Commander (CTG) and Ship's Captain. When the dhow explosion was first reported, I did not make the association with a terrorist attack. I assumed that the dhow had suffered some form of catastrophic

accident, and *Firebolt's* initial reports indicated nothing to suggest otherwise.

As CO I felt obliged to help a fellow mariner in distress. When the first explosion occurred at ABOT, it was immediately clear to me that an attack was in progress, and I was conscious that ABOT was essentially unguarded except for the security detail. Although *Yorktown* was ordered to close ABOT, her draught in relation to the available depth of water meant that she could not transit directly, having to take a more circuitous route instead. I decided to remain with *Firebolt* to render assistance, and also to provide defence to KAAOT. I was to question the wisdom of this decision six minutes later when the second attack was conducted.

Warning Off Dhows

With *Stuart* at Action Stations, I had sufficient personnel available to handle and treat the multiple casualties that were being received onboard. I was also confident that sufficient measures were in place to ensure *Stuart's* safety. We held a large number of dhows visually and on radar, and these appeared no different to the dhow that had exploded. A small boat closed *Yorktown* at speed, totally unlit, and several warning shots were fired, but nothing further developed. An unidentified aircraft was also reported closing the terminals, which increased tensions somewhat.

As the CTG, I reallocated my limited resources to ensure the best ongoing protection of the Oil Terminals. The provision of a strike



HMAS Stuart - Slipper ROTATION 8

air package from *George Washington* was a welcome, if somewhat heavy handed, addition to my small force! I was conscious of the need for rapid reporting ashore, and saw very quickly the potential benefits of a same time reporting system like 'chat'. Whereas I only sent seven OPREP/SITREP messages on the incident, I maintained a near real time narrative report back to the USN authorities in Bahrain. This information flow was sufficiently effective that I was not pressed for any additional information, and my handling of the tactical situation was not hindered. The fact that I had previously worked within the NAVCENT Headquarters, and knew my Task Force Commander (CTF) very well, also assisted.

The XO and Navigator effectively controlled activities on the bridge, and I was able to concentrate my focus largely external to the ship. I used the WEEO and two CPOCSMs as a mini 'think tank' to help ensure that I had taken all appropriate Task Group measures, and left the PWOs to coordinate the majority of the activities internal to the ship. This worked well, and allowed me to think as broadly as possible. However, as the incident stabilised, I was conscious I had not provided the level of information to the Ship's company that I would normally have done without the Task Group responsibilities. I therefore conducted a walkaround of the ship immediately prior to falling out from Action Stations, briefing the Ship's company on what had occurred, and what the plans were for the following days. The Ship's company was in a good state, although some of the younger members were clearly shaken by their experiences. Interestingly, they made it quite clear that despite the incident overnight, and perhaps because of it, they still wanted to proceed with a planned ANZAC day dawn service.

Early next morning, we had to facilitate the movement of some 50 US Marines from ashore to reinforce the platforms, and also work out coordination and logistic support arrangements. This was an interesting task for the XO and Supply Officer! Additional surface ships began to arrive in the NAG, and within a week force levels had more than doubled.

With the increase in assets, and a heightened awareness of the threat to the terminals, it was clear that the NAG Concept of Operations required review. We convened a planning activity, with input from the Task Group, CTF staff, Naval Special Warfare planners, US Marines, and members of the Carrier Air Group. This planning was led by the WEEO (a staff course graduate) and the output was an appreciation of the tactical situation and the Task Group mission. This was forwarded to Fifth Fleet through the CTF, and helped to favourably shape the way NAG operations were conducted from that point. *Stuart* remained NAG MSO Commander until early May, when we proceeded off station for a port visit, and regularly held the duty again until our final OUTCHOP in mid-August.

LESSONS / REFLECTION

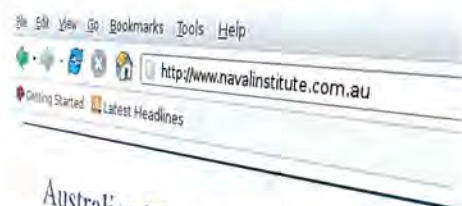
What sort of lessons can be drawn from the incident? The scenario that presented on 24 April was initially a very confusing one, and not like anything we had specifically trained for. However, good training during the workup, on passage, and whilst in theatre, ensured that personnel were competent in their duties and able to respond to the new and difficult situation. Delegation to key officers allowed me to concentrate on my CTG duties, and the Ship's company reacted quickly, effectively, and most impressively to their changing circumstance. That effective training and delegation are critical

to mission success is nothing new, and *Stuart's* experience vindicated the comprehensive force preparation that is provided to all deploying RAN units. The incident and the subsequent months on station also served to remind me of the inherent quality of our officers and sailors. They continued to serve effectively, and with good humour, through until our final OUTCHOP and return to Australia. 🚢

Captain Philip Spedding DSC OAM RAN

Captain Spedding joined in 1982 and qualified as a PWO in 1990. He has held command of HMA Ships *Townsville* and *Stuart* and has recently been posted as COMSURFTG. His operational service has included liaison duties in Bahrain during *Bastille* and *Falconer*, and Command of *Stuart* during *Catalyst* and *Slipper*.

Visit our new Website!



Have your say in the forum
Find other members in your area
Explore 25 years of ANI journals
Read about upcoming events
Read the latest ANI News

www.navalinstitute.com.au

THE AUSTRALIAN NAVAL INSTITUTE

ABN: 45 988 480 239

<http://www.navalinstitute.com.au>

PO Box 29 Red Hill ACT 2603, AUSTRALIA

PHONE: +61 2 6295 0056, FAX: +61 2 6295 3367, EMAIL: a_n_i@bigpond.com

Australian Naval Institute



Journal of the Australian Naval Institute on CDROM

The Australian Naval Institute is pleased to announce that a complete set of the *Journal* (1975-2003) is now available on a 2 disc CD ROM for \$99. Sets can be ordered using the membership application form below.

MEMBERSHIP/SUBSCRIPTION RATES

INDIVIDUAL

Undergraduate student rate*

1 YEAR

\$30

2 YEARS

\$85

3 YEARS

\$125

Australian/New Zealand*

\$45

\$115

\$170

Asia†

\$60

\$129

\$191

Rest of World†

\$67

\$129

\$191

INSTITUTIONAL

Australian/New Zealand*

\$60

\$110

\$160

Asia†

\$75

\$140

\$205

Rest of World†

\$82

\$154

\$226

* Please note that no GST is payable in relation to ANI membership † Includes air mail postage

TAX INVOICE



I apply for membership of the ANI in the category of student/individual/institutional (select/circle one).

Name:

Address:

Post Code:

Email:

Website Username Preferences: 1.

2.

3.

(Please use only characters (a-z) or numbers (0-9). Usernames are case sensitive. You will receive your password by email.)

1. A cheque made out to the Australian Naval Institute is enclosed, OR

2. Please debit my Bankcard/Mastercard/Visa for \$AUD for a year subscription

AND/OR \$AUD for sets of the *Journal of the Australian Naval Institute* on CD ROM.

No.

Name of cardholder (PLEASE PRINT):

Expiry date:

Receipt Required:

Yes

No

I agree to abide by the Constitution and by-laws of the Institute.

Signed:

Date

Forward to:

The Business Manager

Australian Naval Institute

PO Box 29, Red Hill ACT 2603 AUSTRALIA

Australian Naval Institute



SPRING 2006

Journal of the Australian Naval Institute