



# Journal of the Australian Naval Institute



Summer 2005

# AUSTRALIAN NAVAL INSTITUTE

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- to encourage and promote the advancement of knowledge related to the Navy and the maritime profession; and
- to provide a forum for the exchange of ideas concerning subjects related to the Navy and the maritime profession.

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## Journal of the Australian Naval Institute

The *Journal of the Australian Naval Institute* is published four times a year, at the end of January, April, July and October.

The Editorial Board seeks letters and articles on naval or maritime issues. Articles concerning operations or administration policy are of particular interest but we will consider papers on any relevant topic. As much of the RAN's operational and administrative history is poorly recorded, the recollections of members (and others) on these topics are keenly sought.

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**Pen Names.** If a member wishes to publish under a pen

name the Editor must be advised either in person or in writing of the identity of the individual that wishes to use the pen name. The Editor will confirm in writing to the member seeking to use a pen name that the name has been registered and can be used. More details are available on the Institute's website.

**Style Guide.** Articles and correspondence should be submitted electronically in Microsoft Word, with limited formatting. Relevant pictures or maps can be submitted electronically (if under 1 MB), otherwise they should be provided on CD.

Articles should ideally range in size from 3000-7000 words pages, but smaller one page articles will be considered, as well as the occasional much larger piece of work. Submissions should be sent to the Editor in the first instance. Larger articles should be submitted to the Sea Power Centre-Australia for possible publication as a Working Paper ([seapowercentre@defence.gov.au](mailto:seapowercentre@defence.gov.au)).

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## Seapower Centre Research Collection

In 2004 the ANI donated its library to the Royal Australian Navy where it has been incorporated into the Sea Power Centre Research Collection, which numbers several hundred books on naval history and strategy, and more general defence matters. ANI members continue to have access to this unrivalled and often unique selection of research material. The library is normally available for use 0900-1630 each weekday, but please ring to confirm this, particularly if visiting from outside Canberra. As this is a reference collection, it is not possible to borrow the books. The Institute/Sea Power Centre-Australia will gladly accept book donations on naval and maritime matters (where they will either be added to the collection or traded for difficult to obtain books).

The point of contact for access to the collection, or to make arrangements for book/journal donations is Dr David Stevens on (02) 61276503, email [david.stevens3@defence.gov.au](mailto:david.stevens3@defence.gov.au).



# CONTENTS

Notices	3
Correspondence	4
RAN Persian Gulf Operations in perspective <i>Rear Admiral Mark Bonser, AO CSC RAN</i>	5
<b>REGIONAL PERSPECTIVES</b>	
Future challenges from the sea and of the sea <i>Joshua Ho</i>	
Australia's new maritime strategy/The challenge of improving maritime security <i>Catherine Zara Raymond</i>	11
HMAS Adelaide meets the German blockade runner <i>Ramses</i> , November 1942 <i>Lieutenant Commander MacKenzie J Gregory, RAN (Rtd)</i>	17
Operation Celeste - January 2004 <i>Commander John Vandyke, RAN</i>	20
Command and control of maritime operations - the DJFHQ(M) and the tactical warfare commanders <i>Captain Peter Leschen, RAN and Lieutenant Commander Allison Norris, RAN</i>	22
<b>RAN EXERCISES</b>	
• Exercise Dugong 04	
• Exercise Bersama Lima 04	
• Exercise Swift Eagle 04	25
• Exercise RIMPAC 04	
The Maritime Operational Analysis Centre (MOAC) <i>Lieutenant Peter Whittington, RAN</i>	31
<b>SEMPHORE</b>	
• Disaster relief - Cyclone Tracy and Tasman Bridge	
• Replenishment at sea - a significant force multiplier	
• Why Australia needs a mine warfare capability	35
• 60 years on: Leyte Gulf 1944	
• Naval operations other than war 1901-2004 <i>SeaPower Centre-Australia</i>	
<b>BOOK REVIEWS</b>	
• Who's Who in Naval History: From 1550 to the present <i>Reviewed by Lieutenant Commander Glenn Kerr, RAN</i>	
• Is the JSF Good Enough? <i>Reviewed by Commander David Hobbs, MBE RN</i>	48
• D-Day: The Greatest Invasion - A People's History <i>Reviewed by Major Arnaud Ng</i>	

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Front Cover: Crew from HMAS Hobart assisting with the clean up after Cyclone Tracy (RAN)

Back Cover: HMAS Adelaide (RAN)

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## NOTICES

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### Membership Renewals

A reminder that memberships are on a calendar year basis and for those whose membership has expired, you should have received a renewal notice in November for payment by 1 January 2005. Prompt payment is requested.

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### Postings

For those members in uniform who posted at the end of 2004, remember to advise our Business Manager of your new postal address.

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### Annual General Meeting 2005

The 2005 Annual General Meeting will be held on Thursday 10 March 2005, commencing at 1230 at Russell Offices: R1-2-D008.

Minor constitutional amendments will be proposed, allowing for an increase in the size of the Council from 10 to 15 members to manage the increased workload as we continue the revitalisation of the Institute. The 2005-10 Strategic Plan will also be considered.

For those members who do not have access to Russell Offices, please contact CMDR Lachlan King on 62657313 prior to the day to arrange for a visitor pass and an escort to the room.

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### ANI 30<sup>th</sup> Anniversary

The 30<sup>th</sup> Anniversary of the incorporation of the Australian Naval Institute falls on Friday 10 June 2005.

Council has begun planning activities to mark the occasion and these will be advertised in the Autumn (April) edition of the *Journal* and on the website.

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### Naming the *Journal*

The Council is considering plans to radically reformat the *Journal of the Australian Naval Institute* for the 30<sup>th</sup> Anniversary and is considering introducing a 'name' for the *Journal*.

Members are invited to propose suitable nautical names for the *Journal*, which will be considered by Council. Suggestions should be submitted to the Journal Editor by the end of March 2005: [andrew.forbes1@defence.gov.au](mailto:andrew.forbes1@defence.gov.au).

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### CD Set of the *Journal of the Australian Naval Institute*

A reminder that members are able to purchase a scanned 2 CDROM set of the *Journal* from 1974-2003 for \$99. See the inside back cover for ordering information.

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### King-Hall Navy History Conference

The Sea Power Centre-Australia will present the next King-Hall Navy History Conference in Canberra on 21-22 Jul 2005. More information will be provided in the next edition of the *Journal*.

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## CORRESPONDENCE

**Australia and Naval Aviation**

(Commodore Alan Robertson, RAN (Rtd)) - There is an old joke out of New York about two husbands who meet in the street. One says 'How's your wife?' and the other replies 'Compared to who?' I was reminded of this joke when I read a recent paper titled *Australia's Maritime Strategy and Air Power*.

This paper recounts the long and frustrating history of the navy's attempts to get into, and maintain, naval aviation as an organic arm. The general conclusion of the paper is that '*...the limited availability of funds has bedevilled Service planning since Federation. It has affected the Navy in particular because of the high unit cost of sea power. This effect was magnified in the efforts to support a viable carrier force, and its impact on the other Services, and, indeed, on the other elements of Navy itself.*' In other words naval aviation is too expensive, and therefore navy cannot have it (except for rotary wing which is not 'real aviation' according to some Air Force people). To which my response is 'too expensive, compared to what?'

The facts are that Navy budgets have not taken funds from the Army and Air Force since, say, 1947. In fact the boot is on the other foot. While it is difficult to sort out individual Service financial allocations, the plain fact is that Navy has been underfunded, compared to Army and Air Force, by some billions of dollars since 1947. That is right, 'billions of dollars'. Going back to the 1960s. These differentials, adjusted for the effects of inflation, are even greater in today's dollars.

In a ten year period in the 1960s and 1970s, the Army was allocated over two billion uninflated dollars more than the Navy, while the Air Force in the same period was allocated a billion dollars more. Naval Aviation too expensive, compared to what?

As for relative expense within the Navy budget, six submarines have been quoted as costing \$6b, while the Anzac frigates are quoted as costing \$8b. And we are quoted \$3b for three Air Warfare Destroyers. But 'naval aviation is too expensive', compared to what?

It was said recently in discussions before the Budget that the Government had a windfall surplus of \$7b. And at a time when the Government is trying to appease the health and education lobbies, and Defence was down to 1.7% of GDP, it was hoped by some of us that Defence would be a beneficiary of some of the surplus. But

no, it went to tax cuts and baby bonuses with a view to the election. Some part of the \$7b would have bought an awful lot of fixed wing naval aviation.

One of the problems is that those who are opposed to it exaggerate the question of the cost of naval aviation. For instance, during NAP/TAWS, the Air Force asserted that HMAS *Melbourne* cost \$50m annually to run. In fact the highest cost in *Melbourne's* annual budget was \$9m for wages for the ship's company. There was another \$2m for annual refits, stores, stationary, harbour services (berths, tugs etc in Australia and overseas) and victuals. It is likely that the Air Force figure included the cost of NAS Nowra, but Nowra was not closed with the death of fixed wing naval aviation; indeed its role was enhanced to include Army parachute training.

The facts are plain, fixed wing naval aviation is an essential part of the naval weapons system the Navy needs if it is to be the main provider of the instruments needed to implement a true maritime strategy for Australia. As such it is not too expensive, as an essential element can never be too expensive. We contemplate the \$10-20b to buy the F-35 Joint Strike Fighter with equanimity it seems, yet naval fixed wing aviation which can do more than fill the role of a strike fighter is 'too expensive', compared to what?



## RAN Persian Gulf Operations in perspective

Rear Admiral Mark Bonser, AO CSC RAN\*

*The 2004 Vernon Parker Oration was delivered at the Australian Defence Force Academy on 26 August 2004.*

Members of the Australian Naval Institute, thank you for the opportunity to speak to you on the occasion of the annual Vernon Parker Oration.

I was asked to give my perspective about RAN operations in the Persian Gulf, and thought it might be relevant to discuss Middle East operations from different perspectives over time. I find ADF operations in the Middle East from 1990 until now, and especially those by Navy, to be useful in understanding campaigning in its broadest sense, and the maritime aspects of military campaigns that are not as well recognised as perhaps they ought to be.

We have seen and heard an awful lot of thirty second grabs about the six week air/land war to liberate Kuwait in 1991, and the six week air/land war for Iraq in 2003. The things that have not received as much publicity are the precursor operations that enabled both of these actions to be completed relatively quickly. Albeit, there is probably an argument that says the latter is not yet complete, or perhaps not yet completely successful.

In my view, just looking at small bites of what has happened can distort the lessons we learn from operations. When this happens, judgements may be made that overlook the enablers or precursor operations without which the decisive action could not have occurred. In its worse case this might lead to a future force structure based on incorrect assumptions. Additionally, we may not engender a good understanding of all the ways in which military power might be applied to meet strategic aims. Or, having decided what might be the best way to use force, then find it difficult to implement because we do not have the wherewithal necessary to generate, prepare, deploy or sustain the necessary forces.

Recently, I was looking up some information in the Centenary History of Defence about the Korean War, "where the RAN was involved in a blockade, the landing of raiding parties, supplying isolated units and the bombardment of coastal targets, often in poorly charted or mined waters".

Those naval tasks, along with others, have been remarkably enduring through two World Wars, Confrontation, Vietnam, and in the Persian Gulf. Whether we have given enduring emphasis to the capabilities necessary to achieve them, or not, is another matter. If not, there would be various reasons for this, many of them outside the control of Navy. Fortunately the lessons of history are always available to help inform the arguments.

The RAN has had a regular presence in the Middle East since September 1990. Other than for twelve weeks of combat, the main task for the Navy has been sanctions operations against Iraq. In other words a blockade, aimed at controlling both exports and imports. Even though Iraq has only a very small coastline, since August 1990 they have had very few true allies along their land borders. Perhaps only Baathist Syria might have been counted in this category. As a result, Iraq has been enormously dependent upon sea trade for its economic well being, and the generation and sustainment of military capability. General Anthony Zinni, a former commander of the US Central Command has described these maritime sanctions operations and the concurrent air operations to limit Iraq's use of air power as a very effective containment policy.

There is no easy way to quantify the effect of the sanctions program, but it is apparent that the blockade substantially prevented Iraq from regenerating its military after 1991, and must have led to a significant degradation in military skills and morale in the Iraqi armed forces. A useful question to ask might be, 'would it have only taken six weeks to defeat Iraq's military in 2003, if the sanctions had not been maintained after 1991'? Whatever the answer, there is fairly solid evidence that in the right circumstances, the application of military power to contain an enemy may well be more sustainable and less costly than direct action. Having the options available to contribute to either gives far more flexibility in determining what is, or is not, possible.

Montgomery once said 'that what is possible will depend firstly on geography, secondly on transportation in its widest sense, and thirdly on administration'. He went on to say, 'really very simple issues, but geography I think comes first'.

\* Rear Admiral Bonser is the Commander Australian Defence College and was previously Commander Australian Theatre.

There is no doubt that when it comes to implementing the chosen policy for applying military power, geography and the related time and space issues are major factors in ADF planning. Geography and transportation requirements across varying distances, to and from areas of operations, have been prime drivers in determining which ADF forces could possibly be sent to different locations around the world, and for how long they might be sustained.

The relative sizes of the land forces deployed to Timor, only 400 miles from Darwin, to the Solomon Islands, some 1000 miles from Townsville, and to the Middle East, some 5000-7000 miles from various parts of Australia, provide good comparisons in looking at the effects of distance. Naturally, the further the distance the more reliant the entire force becomes on the use of the sea for its deployment and sustainment, and also in critical parts of the operation for their protection. The Royal Marines rediscovered this on the Al Faw Peninsula in 2003, when reduced visibility prevented close air support and they were reliant on naval gunfire support to cover their advance. When multiple operations such as those I have mentioned are happening concurrently, a medium sized defence force such as the ADF can be faced with some stark realities in establishing the priorities for apportioning finite resources between activities that are geographically remote from each other. In this respect, the Middle East in 1990-91 was a much simpler challenge than in 2002-03.

I came to be involved in planning for the most recent action in the Gulf not long after assuming responsibility as Commander Australian Theatre in mid-2002. I was lucky enough to have been involved in similar planning in 1990 as a staff officer in Maritime Headquarters, then as a staff officer for an afloat commander in the Gulf in 1991, as well as subsequently commanding a ship conducting sanctions operations in the Middle East in 1993. The similarities and differences between 1991 and 2003 provide as many useful lessons as do the sanctions operations that were ongoing over most of the period. Similar to 1990-91, the 2002-3 activity was planned as a potential combat operation. The big difference between them was that in 1990-91 it was just a Navy contribution, and in 2002-03 there was a significant contribution from all three Services. And, in 2003 we had joint ADF command arrangements that had not been fully in place a decade earlier (we did not have a Theatre Command or a Joint Logistics Command in 1991, although we did okay without them in a simple scenario).

Another important difference was that the ADF had very little recent operational experience to draw on in 1990, but more than a decade of experience to inform planning in 2002. Not the least of which was some twelve years of participation in an Iraq campaign; a campaign that arguably started in 1990 and remains ongoing today. Regular contributions to containment operations against Iraq, and operations in Afghanistan in 2001-02, were fundamental in informing planning for the six week intervention action in April 2003. In 1990 we were only informed by the limited lessons learnt in exercises with our allies.

In 1990 the ADF was a bit like a football team that had only played in pre-season matches. In 2003 we had played in the main competition for a few years, and this, along with previous coalition command opportunities such as those enjoyed by the RAN in the Maritime Interception Force, were fundamental to successful preparations for 2003. Perhaps Aristotle was right when he said '*we are what we repeatedly do. Excellence then, is not an act but a habit*'. If this is the case, then a lot of Navy's habits were and are good ones.

In 1991 we sent three ships and a diving team to the first Gulf War, in what we called Operation *Damask*. The ADF contribution to the 2003 war in Iraq (Operations *Bastille* and *Falconer*) included: a national headquarters, a Navy task group (ships and divers), a P-3 task group, a special operations task group (including helicopters), an air task group with F/A-18s and C-130s, and liaison officers in the various combatant, component and task force headquarters in the US Central Command. The experience gained by the frigates, the SAS and F/A-18s that were deployed for Operations *Damask* and *Slipper* (the War on Terror) was clearly a benefit in shaping the Australian commitment for the war in Iraq (perhaps another example of habitual excellence).

In looking back at the differences between 1991 and 2003, it confirmed for me that there is really no one answer that fits every circumstance. Indeed, I think I have rarely seen any one solution meet the requirements of more than one operation or part of an operation. And, perhaps that is why the plans for the commitment in 2002-03 were different in part to the arrangements in 1990-91, and to the plans for other operations, such as those in the Solomon Islands.

A unique challenge that arose in the Middle East in 2002-03, that had been relatively simple in 1990 and was not evident in operations elsewhere, was the need for basing and access rights in third party nations. The Chief of Air Force personally visited a number of countries to secure basing



rights for those forces that could not operate into Iraq from the sea. Of course, basing and access rights may not always be forthcoming, and we need to be prepared to conduct land operations from afloat, as well as transporting and sustaining deployed forces. The acquisition of new amphibious ships and air warfare destroyers provides an opportunity to regenerate a capability that has been missing from the force structure for part of Navy's history.

In 1991 the activities concurrent with the Gulf War were largely related to training and international engagement; matters that were relatively easily deferred or reduced in scale. In 2003, the force had to be deployed and supported simultaneously with operations in Timor and Bougainville. As well, there were ongoing border protection operations across the northern approaches to Australia, emergent requirements in Bali, resources to protect in the Southern Ocean, and the need to consider future obligations such as Defence support to the Rugby World Cup in the post 9/11 security environment. All of this required the establishment of relative priorities for the apportionment of finite resources between different force elements and different operations. Not surprisingly, the Middle East and border protection both had a relatively high priority for P-3 Orion aircraft, sea transport ships and frigates. Sustaining both of these operations with these capabilities was a stretch, but fortunately different circumstances in the Solomons allowed us to use other parts of the force structure in that operation. Sea King helicopters operating from an LPA, and minehunters operating as patrol frigates demonstrated the inherent flexibility of Navy's capabilities.

Our most recent Gulf operation demanded the coordination of a much broader range of issues across some eight different force elements. Included in this was the near simultaneous preparation of land, sea and air forces prior to and over Christmas 2002. Albeit some of Navy was already in the Gulf and well prepared, and the SAS and the Air Force had recently been in Afghanistan, or operating over Afghanistan from Kyrgyzstan.

The force preparation was achieved with only a few minor speed bumps, most of which, like in 1990-91, related to operating in a potential NBC environment. But, while anthrax inoculations received some public notoriety, this was a minor issue that was well resolved before operations commenced. An important lesson in this though, was that wherever possible we left nothing to chance. There was a very real threat that Iraq had chemical and biological weapons and would use

them against an intervention force; and the threat could not be ignored.

Defining the employment for the forces in 1990 and in 2002 was similarly constrained, because unlike in Timor and the Solomon Islands, the ADF was not the lead coalition nation. The US Central Command plans for the Middle East were evolving all the time, and were not settled until the last possible moment. Developing the plans for an ADF contribution within the component plans of a dynamic higher plan, so that it could be authorised in time to allow adequate preparation, compressed available timeframes to the limits. Clearly, those things that we had not done in war-like operations for a long time, such as air to air and air to ground combat, required longer preparation. In other cases we were able to revisit 1991 and include previously agreed and well practised tasks such as naval gunfire support, a capability that later proved quite fortuitous.

In 1990 we deployed two senior naval officers and a Defence civilian to the Middle East for a few days discussion with elements of the US naval component and some regional nations. But, notwithstanding this, the coalition plans were still embryonic and we saw very little detail until well after our ships had deployed and integrated into the relevant task force in the US naval component.

In 2002 we had a forty person planning team working in the same location as the US Central Command. They had secure communications and helped identify the coalition commander's general intent as it was evolving. But, similar to 1990, even this access did not give us universal visibility of the detailed component command and task force plans within which our forces would potentially operate. The ADF elements of these plans were refined later, both in Australia and overseas, but in many cases this only occurred in the last few days before operations were authorised to commence. Planning limitations of this nature need to be expected when contributing to a coalition led by another nation, especially one as big as the US military. Our experiences in leading smaller coalitions in Timor and the Solomons were quite different, because in those operations the ADF was leading the military planning at all levels.

Navy had a significant advantage in overcoming this planning problem in 2003. By then the RAN task group commander was also a coalition commander in the US 5<sup>th</sup> Fleet chain of command. This arrangement commenced in 2001 when HMAS *Anzac* was reassigned from Operation *Damask* to Operation *Slipper* following 9/11. The coalition command role was first met by the then Captain Nigel Coates, and was built on in

following rotations by Alan du Toit, James Goldrick and Peter Sinclair.

The professional and innovative way those commanders approached their duties placed the 2003 CTG, Peter Jones, and his staff in a very well respected position in 5<sup>th</sup> Fleet. Specifically, they shifted the focus of the sanctions operations to a close blockade that became very effective, and saw the ships operating in Iraqi territorial waters under the authority of the UN Security Council's resolution. One upshot of this was that unlike in 1991, the Iraqis did not have an opportunity to lay defensive minefields because the coalition controlled the tempo of operations throughout all of the preparatory phases. In the end, the coalition plan for the North Arabian Gulf in which our ships participated was largely Australian planned, and commanded by the now Commodore Peter Jones. The operational results speak for themselves, and most importantly, the arrangement helped safeguard Australia's national interests.

The SAS and air group teams physically integrated later than Navy. But, their professional standing with the coalition allowed the SAS to influence the special forces plan such that they could operate in a dedicated Australian sub-area that allowed us to safeguard national interests, but at the same time complement the overall coalition special forces plan. As a demonstration of another way to do business, the air combat group's F/A-18 operations were controlled on a sortie by sortie basis that ensured the selection of targets was in accordance with our national interests and guidelines, while complementing the overall air campaign.

The deployment and redeployment of some rather transport-intensive forces, mainly from Army and the Air Force, but also Navy's divers, was complex in 2002-03. As Monty said *'operations are dependent on the ability to project a force, especially a long way from home, and extract it at the end'*. Fortunately, ships and some aircraft self-deploy, and some of them can help deploy other forces. Some of our ships and aircraft are a-bit more like a bus than a Formula 1 race car. You can only fit one person in the Formula 1 car, but a few more can share the close comforts of a bus. These transportation capabilities are a very good reason why we should never underestimate the value of the bigger, slower and less sexy bus.

Of course Navy divers don't always self-deploy as readily as ships,. But, getting the divers and others deployed is where our new joint command arrangements, including a dedicated Movements Group, makes it far easier now than

in 1991. The benefits not only include efficiencies in moving all three Services, but, allow the priority flow of people and materiel in a timely and synchronised manner. This is important because it ensures you can start the first innings with your opening bowlers or batsmen.

Unlike 1990-91 where we only had one task group, or operations such as those in Timor, each of the main task groups in the Middle East in 2002-03 were geographically dispersed. Staging was kept to a minimum by deploying force elements directly to their separate basing areas, wherever that was possible. The task groups then managed their own staging and reception. Onward movement in the Middle East was only required for the Special Forces task group and those people working in the coalition air operations centre, where basing and access requirements in some countries made that necessary.

Integration of the force elements into the relevant central command components was managed directly by each of the task groups. Overall this meant that there was little requirement for a large footprint in the area of operations to centrally manage those functions across what were very separate and widely dispersed locations. All that was needed was a small joint movements coordination centre (a bit like a travel agent) to support the task groups with the movement of individuals or small groups of replacements. This meant we could use scarce people skills elsewhere, such as in Timor and the Solomons.

But, getting to the match is just part of the challenge. Even a bus needs the equivalent to the Formula 1 pit stop, occasionally. Sustaining the 2003 force, including rotations and replacements, along with concurrent operations elsewhere was a challenge in some cases. Especially where border protection operations also placed high demands on the availability of the P-3's and ships. And, there were sequential tasks that required a quick turn around. Such as when HMAS *Manoora* returned from sea transport tasks in the Gulf and proceeded directly into amphibious support for operations in the Solomon Islands; once again demonstrating the inherent flexibility of ships.

In 1990, all we had to do was put a couple of dozen people in the same location as the USN Logistics Command, let a single contract with a providore in the region and leverage off allies for immediate operational support for things such as fuel, and some ammunition. In sustaining the operational rate of effort in 2003, there was a whole range of administrative and logistic activities necessary to ensure we could maintain the force commitment, including the provision of



some rotation forces, and unique Australian stores.

The philosophy that was used in sustaining the force in 2003 was to do as much of it as possible from back in Australia and reduce the administrative burden on the operating forces and deployed headquarters. This had two benefits, firstly it minimised the footprint forward, helping to maintain the authorised numbers in the force, and secondly it allowed scarce Australian assets to be able to support a number of operations and not be dedicated to just one.

The force protection of the deployed forces in 2003 was also different to 1991 in that it was now being conducted in a climate of threats from terrorism. All of it was very much reliant on intelligence and warning systems that talk to our allies. We did not have much of that in 1991, but it was much improved in 2003. But, irrespective of technology, the real issue for all of our commanders and staff officers was the need for a good understanding of just what is in the national interest, and why it ought to be safeguarded. This is a matter that did not change between 1990 and 2003.

The requirements for the direction of all of these aspects of operations are no longer as simple as they seemed to me from where I sat in 1990. And, are certainly not as simple as when the Admiralty sent Nelson into the fray with a single short order and little opportunity for despatches until the next mail packet, sometimes months later. This would have made it very difficult to call for reinforcements or replacements, but there would have been a splendid absence of intervention from above. While command appears to be more complex now, perhaps because email has replaced the mail packet, our new joint arrangements do make the planning for the application of highly technical military forces more rigorous and efficient. Benefits that are essential given the cost of highly technical forces and the pervasive nature of modern communications, including the way they enhance timelines for the media.

Next to the allocation of car parking spaces, command and control is probably one of the most emotive subjects experienced in the planning and conduct of operations. In 1991 we had simple arrangements, with an afloat task group commander (also the national commander) reporting to the Maritime Commander, and he then to the CDF. We also had two or three liaison officers with the USN component and task force commanders. This arrangement worked well in those circumstances, and as I recall it, the only issue that needed resolution was whether the task

group would be commanded by the senior ship captain or a separate CTG. In the end, wise heads prevailed and the latter option was chosen.

But, in 2003 we had the need for command arrangements at all levels, from unit through task group and national command, to the Theatre Command and above. Most of this was driven by an enduring fundamental of command. Who needed to make what decisions, and where? The setting and changing of the mission or broad tasks was retained at a very high level. Crucial to the process was the ability to exercise national influence in the prime US headquarters, a task performed by our national commander. Equally vital to the safeguarding of our national interests was the relationship between our task group commanders and the US commanders to whom they were assigned. The necessity to be responsible to separate foreign commanders for agreed aspects of operations required considerable flexibility. In this case it meant that our own force elements or groups did not operate as a national joint task force like in Timor, but were dispersed within coalition components or subordinate task forces.

In Australia the then Theatre Command also had to look at a range of Australian support functions that required central coordination in the Middle East, relative to those that might have been coordinated by a coalition commander on our behalf or back in Australia. Importantly, there was a real need for the Theatre Command component commanders, such as the Maritime Commander, to provide operational and technical advice on the safe and effective use of their forces. Although this was one of first operations where they were not directly in the command and control chain, the arrangements worked very well and did not become a point of friction.

I have already mentioned the need to synchronise and coordinate operations in the Gulf with other ADF operations and supporting activities. Theatre Command had to establish relative priorities for the apportionment of resources, and this was a matter of constant attention, particularly given the requirement for simultaneous ship and P-3 commitments off northern Australia. Our small and finite capacity in command and control resources, especially staff officers, was particularly critical. They needed to be placed where they could contribute effectively to as many operations as possible. Deploying officers to fill every staff function may not always be the best answer, especially if the function can be performed back in Australia, and across more than one operation. Fortunately, Navy travels very light in this regard.



Overall, the success of *Falconer* would indicate that we got most of the planning right. From a naval perspective, contributing factors to this success included long experience in the theatre, a well respected operational reputation built up during previous *Damask* and *Slipper* deployments, and an established command role in the US 5<sup>th</sup> Fleet. I have no doubt that this latter relationship was the catalyst for coalition commanders accepting naval gunfire support as a viable part of the maritime plan. Naturally, there were some points of friction, but these were not present in the forces that went into combat. In the end good people ensured a good result.

Since then we have progressed to the point that joint operations such as those in the Solomons are becoming second nature to our commanders and staff officers. Even to the extent that we now operate in support of the Federal Police, who lead the operations in the Solomon Islands.

Perhaps all of this is why Patton once said to his commanders '*gentlemen, the officer who does not know his communication and supply as well as his tactics is totally useless*'. He was right, but I don't know that I would admit as much to any supply or communications officers.

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## REGIONAL PERSPECTIVES

### Future challenges from the sea and of the sea

*Joshua Ho\**

Much has been written and said about the 21<sup>st</sup> century being the 'Asia-Pacific Century' as the region is expected to experience phenomenal growth rates unprecedented in the history of world development. But little do we realise how true the adage will be. Indeed, projections done by both US intelligence agencies and wealth management institutions point to the fact that we are already witnessing the beginnings of an Asia-Pacific century.

Currently, the combined 2002 GDPs of China, India and Japan are already half that of the US in nominal terms. By 2015, the Central Intelligence Agency's (CIA) long term growth model has forecasted that the combined GDPs of China, India and Japan would surpass that of the US and the European Union at US\$19.8 trillion, US\$14 trillion and US\$11.6 trillion respectively in 1998 dollars. By 2050, the situation will become even more astounding with Goldman Sachs projecting that the combined GDPs of China, India and Japan will be slightly more than twice that of the US and about four times that of Russia, UK, Germany, France and Italy combined in 2003 dollars. The largest economies in the world in 2050 will be China, the US and India respectively, with Japan at a distant fourth. In the short span of time of only one generation, the economic centre of gravity would have shifted to Asia.

As the economic centre of gravity shifts to the Asia-Pacific, it is natural and inevitable that maritime power also shifts to Asia given the nexus between maritime power and economic power. Again, the shift in maritime power may have already started by observing current trends in four areas: (1) the trade flows into and within Asia, (2) the increasing energy demand in Asia, (3) the strength of the merchant fleets in the region, and (4) the spending on regional navies.

### A shift in maritime power

The first trend is that intra-Asian trade flows have increased and Asian trade with the US and Europe is also increasing. In particular, China's trade expansion has remained outstanding and broad-based. China has become the fourth largest

merchandise trader in 2002, and across the globe, China has become a major supplier and a major export destination for many countries. For example trade between ASEAN and China has increased and China has become the top export partner for South Korea, Japan, and Taiwan. China's trade with India and the European Union is also increasing at a breakneck pace.

The second trend is that resource demand, particularly energy demand, in Asia is rising in tandem with its economic development. Asia as a whole currently uses about as much energy as the US. By 2020, Asia will have the same energy consumption as North America and Western Europe combined while US consumption will rise by just slightly more than 25%. However, Asia is only close to self-sufficiency in coal. For natural gas, Japan, South Korea and Taiwan already consume most of the region's methane supply. To support the expected increase in consumption in natural gas, the region will have to turn to Russia as well as the Middle East. As the absolute demand for oil rises, Asia has also to import oil from outside the region, particularly from the Middle East. This increased energy demand will mean an increasing reliance on the sea as most of the energy is transported by sea.

The third trend is that the strength of the merchant fleet in Asia has been increasing relative to the proportion of the world's fleets. By July 2003, Asia owned about 40% of the merchant fleets amongst the Top 20 owners in the world, and 41% by tonnage. If we include the US, then the Asia-Pacific owns about 46% of the merchant fleets and 48.1% by tonnage and the figure looks set to increase in the future. Already construction of the world's largest shipyard with a frontage of 8km is underway in Shanghai, China. This development will further consolidate East Asia's position as home to the world's largest shipbuilders with Chinese, South Korean and Japanese shipbuilders having 12.8%, 36.2% and 28.8% of the global order book in terms of tonnage currently.

The fourth trend is that the capabilities of the East Asian navies are set to grow as regional countries continue to modernise their naval fleets. Asia-Pacific governments are expected to double their current expenditure on new naval ships by the end of this decade partly to protect their natural resources and partly to insure against regional conflict. Military reforms and modernisation programmes have been initiated in

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the region and East Asia's Regional Defence Expenditure as a percentage of GDP has risen to 2.08% in 2002. The growth in emphasis on defence and, in particular, the Navy is expected to continue into the future. AMI International's Robert Keil has projected that regional governments will spend a total of US\$14 billion annually by 2009 on their navies.

### **Future maritime challenges**

The trends of increased trade flows, increased energy demands, increased strength of merchant fleets and increased spending on navies in the region all point to the shift in maritime power to Asia. As maritime power in the region increases, the ability of the regional countries, as well as extra-regional powers like the US, to manage the resulting power politics will be a key determinant of stability. But what kind of possible future scenarios are we looking at? In the National Intelligence Council's sponsored study on global trends by 2015, four alternative future global scenarios have been postulated based on outcomes of the globalisation process. They can either be inclusive, pernicious, or can result in regional competition and the creation of a post-polar world.

The inclusive globalisation scenario depicts a positive outcome of globalisation where a majority of the people benefit from globalisation as global cooperation increases. Incidents of conflict are small within and among states that benefit from the globalisation process and internal conflicts will persist in and around the minority of states that are left behind in the process.

The pernicious globalisation scenario paints a negative outcome of globalisation where the elites thrive and the majority of the population fail to benefit from globalisation. As a result, internal conflicts increase, which are fuelled by frustrated expectations, inequities and heightened communal tensions.

The regional competition scenario postulates that regional identities will sharpen in Europe, Asia and the Americas, which is driven by political resistance to US global preponderance. Each region then becomes preoccupied with its own economic and political priorities. Although, military conflict among and within the three major regions does not materialise, internal conflicts increase in and around the other countries are left behind as in the inclusive globalisation scenario.

The post-polar world scenario paints a waning US influence in world affairs due to domestic politics and a stagnating economy which forces it to withdraw and rationalise its military presence globally. Europe becomes inward looking and

Asia prospers in spite of the absence of the US. As a result of the absence of the US, longstanding national rivalries among the Asian powers are ignited and conflict is postulated between traditional rivals China and Japan.

In one of the four scenarios, a regional conflict is postulated. In three of the four scenarios, the possibility of internal conflicts is forecast, while in three of the four scenarios, there is a possibility of internal conflicts spilling over to its neighbours. Hence, the ability to manage and resolve conflicts that arise will become a key determinant of regional stability if we want to allow the wealth effects from regional economic progress to spread and for the majority of the people to benefit from globalisation. Specifically, in the maritime arena, the two main challenges are to ensure the security of the sea-lanes in order to ensure the continued unimpeded flow of resources and goods, and to prevent maritime conflicts between states due to resource and trade competition as the region and their navies grow.

The main threat to resource and trade security will mainly arise from piracy and maritime terrorism in and around the vital sea-lanes and choke points in East Asia, of which the Malacca Straits is the key thoroughfare for merchant shipping. Inter-state maritime conflict may also arise due to competition for resources, territorial boundary disputes and from traditional nationalistic rivalries.

Despite the challenges posed to resource and trade security through piracy and maritime terrorism, in addition to the possibility inter-state maritime conflict, recent developments have made the resolution of these challenges more likely. The increased cooperation seen through the development of a web of relationships in East Asia increases the security of access to resources and trade and decreases the likelihood of inter-state conflict. The web of relationships between the United States, regional powers and ASEAN countries, together with Naval and Coast Guard presence, serves to act as a deterrent and dissuade potential actors from conducting acts of maritime terrorism or piracy. The increased web of relationships in the political, economic and military spheres, also provide a mechanism for the resolution of conflicts before they arise.

### **Towards an inclusive process**

The Asia-Pacific century looks set to be established with China, India and Japan leading the pack. Fuelling the Asia-Pacific engine will be the continued economic growth of China as well as those of India, Japan, and the US. As a by-product and because of regional economic growth,



maritime power will also shift to East Asia. How this surge in regional maritime power is accommodated, and how regional and extra-regional countries like China, India, the US, Japan, Russia and the Koreas manage the power politics that emerge will be a key determinant of regional stability. A worthy goal for all concerned therefore, is the continued nurturing of regional multilateral frameworks to full maturity in order for the regional conflicts to be resolved in accordance with the rule of international law. Just as worthy is the goal of achieving a globalisation process that is inclusive and equitable, bringing benefits to the majority of the people of the world.

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### **Australia's New Maritime Security Strategy** *Catherine Zara Raymond\**

National security was a key theme in the run up to this year's federal election in Australia, with both Labour and the Liberals pledging to step up security, in particular along Australia's coastlines. Labour outlined a A\$300 million regional maritime anti-terror plan that included the creation of an Australian Coast Guard, whilst the Howard government proposed a series of new maritime security measures, worth A\$102 million dollars over four years.

With the Howard government's landslide election win, we will see the implementation of this maritime security plan as part of the government's National Security Strategy. The new measures include:

- increasing the rate of container inspection in Australia's major ports by 25 percent. This increase will result in approximately 100,000 containers being x-rayed every year;
- customs officers boarding more vessels arriving at their first Australian port;
- increasing the Customs closed circuit television network from 32 ports to 63 ports;
- posting specialist immigration officials at ports to assist with border control;
- amending the Migration Act to allow for more checks on cruise ship passengers;
- introducing a maritime security identification card for maritime industry

employees;

- reviewing the current security provisions in place in Australia's offshore oil and gas facilities and
- strengthening intelligence collection and the provision of intelligence information at Australia's major ports.

There are also plans to create a new maritime security zone extending 1,000 nautical miles (1,850 kilometers) from the coast. Ships entering this new Australian Maritime Identification Zone will have to provide details of their journey and their cargo. Once ships come within the 200 nautical-mile (370 kilometer) limit of Australia's territorial waters, they will be required to give more detail of cargoes, ports visited, ship owners, registration and destination.

### **Will it be enough?**

On the Second anniversary of the October 2002 Bali attack that shook Southeast Asia, we are reminded that the threat of international terrorism still casts its shadow over the region. Despite recent arrests, the Jemaah Islamiyah (JI) network remains resilient and is expected to strike again. The recent suicide bombing of the Australian Embassy in Jakarta on 9 September 2004, which killed nine people and injured more than 180, is certainly proof of this.

JI has planned attacks against naval vessels in the region. In late 2001 JI had planned to target American military vessels at Changi Naval Base. However these plans had to be put on hold as the Singapore JI members lacked the operational capacity to launch the attack. Renewed fears of a JI attack against maritime targets came after US Intelligence passed on warnings about a plot to hijack a vessel in the SLOCs, or sea lines of communication, of the region. The warnings, issued in September 2004, stated that activists from JI have been discussing plans to seize a vessel using local pirates. Other terrorist attacks attributed to JI are:

- The Christmas Eve bombings of churches in Indonesia in 2000, which killed 19 people.
- The 12 October 2002 Bali suicide attack in a nightclub that killed nearly 200 people; mostly Western tourists including 88 Australians.
- The Marriott Hotel bombing in Jakarta on 5 August 2003 that killed 12 people.

The Philippines continues to be a haven for terrorist activity, with mounting evidence of terrorist training camps on the Philippine island of Mindanao and growing cooperation between JI

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and the two Philippine Muslim insurgency groups - the Moro Islamic Liberation Front (MILF) and the Abu Sayyaf Group (ASG).

Both the MILF and ASG have carried out previous maritime terrorist attacks. One such attack by MILF took place on a busy seaport in Davao City, in the Philippines, in April 2003. 17 people were killed in the attack. The group has also carried out attacks on Philippine shipping, mainly placing bombs on domestic inter-island ferries being used to transport members of the Armed Forces of the Philippines and Christians to and from Mindanao. On 27 February 2004, ASG carried out a bombing on the MV *Superferry 14* shortly after it left Manila Bay, killing more than 100 people. This attack resulted in the greatest number of deaths since the Bali bombing.

These groups have therefore shown their interest in targeting maritime infrastructure and/or their desire to target Australian interests.

Over 40 percent of Australia's sea trade passes through the narrow waterways of the Indonesian and Philippine archipelagos. In the year 2000-01, 3200 ships entered Australia from overseas, making more than 9600 calls at Australia's ports. More than 100,000 travellers arrive at Sydney Port alone each year.

The Australian Government pursues a policy of decreasing the Australian-flagged coastal fleet in favour of cheaper flags of convenience shipping. Flags of convenience vessels are registered in countries such as Panama or Liberia to avoid heavy taxes and stringent inspections. Foreign ships now carry about 98 percent of Australia's international trade.

These factors leave Australia's maritime sector particularly vulnerable to terrorists who have demonstrated their skill and dedication, and willingness to sacrifice lives to achieve their aims.

#### What more can be done?

Australia needs to engage in, and promote cooperation, at the regional level. It needs to work with the countries of Southeast Asia to help develop and strengthen their capabilities to fight terrorism. According to Sam Bateman, a retired commodore of the Australian Navy, there is 'a lack of trained maritime police, inadequate boats and equipment, and inexperience with complicated concepts of law enforcement such as the doctrine of hot pursuit'. This is particularly a problem in Indonesia.

In July this year, the International Ship and Port Facility Security Code (ISPS Code) entered into force. It requires ships and ports to adopt a number of new security measures. However, the main problems with the new security measures are

the lack of enforcement and a set of agreed minimum standards which these measures have to meet. These problems are particularly significant in States which have flags of convenience vessels on their shipping registers. It has been noted that these States 'lack the resources or people with sufficient expertise to enforce the standards that are acceptable to the shipping community at large'. Australia's increased use of flags of convenience vessels and the potential risk to maritime security that this poses needs to be addressed. The proposed new Maritime Identification Zone should go some way towards mitigating these concerns. However, its efficacy will be limited by the sheer size of the area concerned, and the strain on resources that will result.

Howard's earlier pledge that he will not hesitate to launch pre-emptive strikes in other countries in order to prevent terrorism at home has tended to alienate Australia from its regional neighbours. In his first press conference since his re-election, Howard promised to build stronger ties with Asia. This is a step in the right direction, but the need to move beyond mere rhetoric is important. Signs that significant security cooperation may be on the cards came with the announcement that Canberra hopes to have a new agreement with Indonesia covering defence co-operation, anti-terrorism and police operations.

The maritime industry is vital to the Australian economy. The 'hardening' of security surrounding land targets following 9/11 means that the 'soft underbelly' of the maritime industry is now, by default, one of the new targets of this global terror. Although Howard's new maritime security strategy will go some way to reducing the vulnerabilities of Australia's maritime sector, the threat itself will remain.

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#### The Challenge of Improving Maritime Security

*Catherine Zara Raymond*

Immediately following the shocking September 11<sup>th</sup> World Trade Centre attacks in New York, governments around the world hurried to assess their vulnerability to highly organised terrorist groups willing to sacrifice many lives to achieve their aims. Although the initial focus was on the vulnerability of the air transport system, attention soon turned to the maritime sector - that is, the vulnerability of port infrastructure and

commercial shipping to a maritime terrorist attack.

Following requests by the US, the International Maritime Organization (IMO) - a specialised maritime agency of the United Nations - developed an international maritime security code that would address some of the perceived vulnerabilities found to be present in most states' maritime security systems. In December 2002, adoption of the new code - the International Ship and Port Facility Security Code (ISPS Code) - was made mandatory under international law.

The Code, which entered into force on 1<sup>st</sup> July 2004, covers: Cargo vessels over 500 gross tonnes on international voyages, port facilities serving ships on international voyages, passenger ships and mobile offshore drilling units.

It requires ships and port facilities to carry out security assessments, after which ships are required to create ship security plans, appoint ship security officers and company security officers. Ships are also required to carry certain onboard equipment. Port facility requirements include the creation of port facility security plans and port facility security officers. Port facilities are also obliged to keep certain security equipment.

As each ship and port facility represent different levels of risk or are under varying levels of threat, the ISPS Code requires the contracting governments to set an appropriate security level, in order to communicate this to the relevant parties. The security levels are 1, 2, and 3, which correspond to normal, medium, and high threat situations, respectively. When there is a heightened risk of a security incident, the security level is raised. Ships and terminals are then required to take extra protective security measures.

#### **Has the ISPS Code been successfully implemented?**

Implementation of the Code, despite some slow starts, has largely been a success. According to the latest figures, 89.5% of over 9000 declared port facilities now have their port facility plans approved and 90% of ships that have to comply with the ISPS Code have now had their International Ship Security Certificates issued.

Singapore was one of the success stories. Through close cooperation with the port operators and ship owners, its port facilities and ships met the ISPS Code requirements by the 1<sup>st</sup> July 2004 deadline, unlike many of its regional neighbours. In fact Singapore's container ships began to be certified as ISPS compliant, ten months before the deadline.

On the other hand, implementation of the Code

in Africa has been less successful. Only half of the countries in Africa to which the Code applies have had their port facility plans approved. Former Soviet and Eastern European countries are also lagging far behind in their implementation.

#### **Has the ISPS Code reduced maritime vulnerability?**

In theory, compliance with the Code should reduce the vulnerability of port facilities and ships to attack by maritime terrorists and pirates. Reducing the vulnerability of ships to attack from pirates is particularly important in Southeast Asia, which is home to one of the world's busiest and economically valuable shipping lanes - the Straits of Malacca, and also the world's most pirate plagued nation - Indonesia. Pirate attacks, or armed robbery as it often referred to, in Indonesian territorial waters, account for a quarter of the global total. It has been estimated that pirate attacks result in losses of US\$25b each year, across the globe.

However, according to evidence gathered by the International Maritime Bureau (IMB), from its Piracy Reporting Centre in Kuala Lumpur, while there has been a decrease in the number of pirate attacks reported worldwide in the first nine months of 2004, it is still expected that attacks will spike towards the end of the year, due to the delay in the reporting of attacks by some countries. Also, the number of casualties from pirate attacks has remained high. Thirty crewmembers have been killed so far in 2004, as opposed to only twenty at this point last year.

#### **Are there flaws in the new security code?**

A number of problems have started to come to light, which point to serious deficiencies in the Code itself and in its implementation.

One of the main problems is that the IMO is powerless when it comes to enforcing its regulations. It can only monitor compliance. When we combine the IMO's inability to enforce its regulations with the simple fact that in many of the world's poorer nations there is a lack of resources and people with sufficient expertise to enforce the standards that are acceptable to the shipping community at large, the result is only a veneer of compliance with the new security standards. In order to address this problem the IMO has developed a new 'train-the-trainer' programme which is intended to aid ISPS Code implementation. Under the programme qualified and approved instructors will train those responsible for training and implementing the ISPS Code in the various countries.

In another initiative designed to address this



issue, the US Coast Guard (USCG) is beginning a series of ISPS Code checks. They intend to visit 135 countries over the next three years, in order to verify the various countries compliance with the ISPS Code. Despite the declared aim of these inspections as being to 'share and align' security practices, the USCG has warned that enforcement actions will be taken against ships arriving from errant harbours. Such measures could range from controlling a ship's movement in harbour, armed escort, cargo delays or complete denial of entry to a US port. The US has also warned that it will take punitive measures against countries that do not allow the inspections to take place.

Meeting the ISPS Code requirements places substantial additional costs on ship owners. Firstly, ship owners have in some cases had to increase their crew size, adding one or two new members. Secondly, costs incurred by ports that have also had to introduce new security measures under the Code are being passed onto the ship owners in the form of extra charges for using the particular port. The most recent example being the Port of Brisbane which is going to charge its port users an extra AUD\$1.4m next year, in order to cover charges it incurred mainly through implementing the ISPS Code. This will have repercussions throughout the global economy, possibly leading to price increases on imported and exported goods. While security is recognised as being one of the costs of doing business in the post 9/11 world, the ISPS Code has yet to prove itself a worthwhile weapon in the arsenal of maritime security.

A significant flaw in the ISPS Code is that it only applies to ships over 500 gross tonnage that are employed on international voyages. Therefore, it does not apply to most fishing vessels and tugboats, which are usually under 500 gross tonnage. It also does not apply to the many merchant ships engaged in domestic trade. The result is that there are a substantial number of ships operating in Southeast Asian waterways that are not covered by the Code. This is a worrying situation given the recent spate of attacks on tugboats in the Malacca Straits. In the latest attack which took place on November 30 on a Malaysia-flagged tugboat, the tug's captain and chief engineer were kidnapped.

In an effort to address this problem Singapore's port authority has introduced additional measures such as the Harbour Craft Security Code to ensure that harbour craft plying within its port waters comply with general security standards. Also, small vessels that are not required to comply with the ISPS Code are also required to fill up a 'Ship Self-Security

Assessment Checklist' prior to entering the port waters.

The ISPS Code clearly has a number of limitations and it will therefore not significantly reduce the vulnerability of the maritime sector to attack from terrorists or pirates. However, as Captain Mukundan, of the IMB states 'The ISPS code is a necessary first step in establishing a global maritime security framework.' In other words it forms a baseline standard which can be built upon in the future. Alone, it cannot defeat the challenges facing maritime security.



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## HMAS *Adelaide* meets the German blockade runner *Ramses* in the Indian Ocean in November 1942

Lieutenant Commander Mackenzie J Gregory, RAN (Rtd)

HMAS *Adelaide*, a 6-inch gun light cruiser, was laid down on 20 November 1915 at the naval Dockyard at Cockatoo Island, but was not completed until 31 July 1922. Originally built as a coal burner, she was converted to oil in 1939 with a stowage capacity of 1420 tons.

In April 1924 *Adelaide* joined the Special Service Squadron of the Royal Navy, and accompanied them for part of their world cruise. This resulted in *Adelaide* becoming the first RAN ship to traverse the Panama Canal. April 1925 found her back home in Australia as a member of the RAN Squadron. The cruiser spent 10 years in reserve from June 1928 before returning to Cockatoo Island for modernisation and refit. In March 1939 the ship was recommissioned, only to be placed back into reserve in May. The imminence of war between Britain and Germany gained her a reprieve and 1 September 1939 found *Adelaide* back on active duty with Captain H.A. Showers, RAN, in command. Her role was the defence of trade on Australia's eastern seaboard.

With the French capitulation in Europe in 1940, the pro-German Vichy Government moved to establish control in French overseas territories, including New Caledonia. This initiative gave the Australian Government cause for alarm as they had no wish to allow such a strategic weakness in their sphere of influence. *Adelaide* was promptly dispatched to Noumea to prop up the Gaullist Free French movement. The move was successful and the pro-Vichy Military Governor handed over to the Free French appointee on 19 September. *Adelaide* returned to Sydney in early October 1940 with her mission satisfactorily achieved. Over the period May-July 1942 *Adelaide* undertook a refit at Garden Island, including the fitting of six 20-mm anti-aircraft weapons. She then sailed to Fremantle in Western Australia for convoy and ocean escort duties in the Indian Ocean.

I joined the heavy cruiser HMAS *Canberra* as a sub-lieutenant RAN in December 1941, and was there awarded my Watchkeeping Certificate. I was the Officer of the Watch at the commencement of the battle of Savo Island on 9 August 1942. We were sunk that night alongside the three US heavy cruisers *Quincy*, *Astoria* and *Vincennes*. I returned to Australia to re-kit and

enjoy two weeks survivors leave, and was then appointed to *Adelaide*. I barely had time to settle in. On 23 November 1942 in company with the Dutch light cruiser *Heemskerck* we sailed from Fremantle with three merchant ships loaded with oil drilling equipment bound for Abadan.

### German MV *Ramses*

Built in 1926, the German MV *Ramses* of 7982 tons, with a speed of 12 knots had left Hamburg on 31 July 1939 for Shanghai. She arrived on 25 August, and became stranded on the outbreak of war on 3 September. She remained in Shanghai until she sailed for Kobe on 21 March 1941. In May she sailed to Darien where she loaded soya beans and rubber before sailing for Valparaiso on 20 May. Enroute *Ramses* was turned around and told to steam for Yokohama. She arrived on 30 July and her cargo was unloaded. She then remained in Yokohama, serving as a prison ship, and housing those Allied sailors captured by the several German Armed merchant raiders prowling the world's oceans. During this period the Japanese fitted three scuttling charges in *Ramses*, each one supplied with a time delay mechanism of eight minutes.

*Ramses* now loaded into her lower holds 4200 tons of whale oil, 700 tons of fish oil, 700 tons of lard, 50 tons of coconut oil and 300 tons of tea. After languishing in the Far East for over three years, *Ramses* sailed at last on 10 October 1942. She cleared Yokohama bound for Batavia via Kobe, and Balikpapan in Borneo. Here she offloaded about 1000 tons of general cargo including building supplies and some very important beer.

The Batavia stop was most important - to load 4000 tons of rubber which was a commodity in desperately short supply in Germany. She also loaded 1500 cases of quinine destined for Bordeaux. *Ramses* sailed for France on 23 November 1942 and planned to run the Allied blockade. A great deal of attention was given to the placing lookouts in the ship and three soldiers and three seamen on each watch were given this duty. One was placed in the crow's nest, one on each bridge wing, one forward, one aft and one as a spare. Each man was supplied with a powerful set of binoculars, a telephone was connected to

the crow's nest and both the aft lookout and the helmsman wore a telephone headset.

*Ramses* was fitted with only light armament: two 20-mm guns on each side of the bridge, two machine guns atop the charthouse and two British machine guns mounted aft. On the poop was a large dummy wooden gun fitted with its own wooden platform - this life-like contraption had been supplied and fitted in Japan.



Figure 1: MV *Ramses* in Japan

The crew in *Ramses* were not naval - Captain Falke was a merchant navy officer - and consisted mainly of German merchant sailors and a few Finns. The only service personnel were the 15 gunners, one lieutenant and 2 petty officers.

*Ramses* was ordered to proceed from raider to raider in the Indian Ocean (she was due to rendezvous with a Raider on 29 or 30 November to collect more prisoners taken from allied ships). Having reached the Atlantic Ocean she would be similarly passed from U-boat to U-boat. Finally, when close to Europe, a Focke Wulfe Condor aircraft would provide protective cover. All the crew had been promised the new Blockade Runners' Badge. The badge was surrounded by a chain, with a central image of the *Bremen* breaking through.

### Running the blockade

At 1416 on 28 November 1942 *Adelaide's* masthead lookout reported smoke 20 degrees on the starboard bow. This was followed by a report of two masts in view, then the top of a funnel. Within two minutes bridge personnel could see the tops of two masts. We altered course towards

the target and increased speed, while at 1422 the quarry turned away and began to broadcast a distress message '*RRR Taiyang followed by a suspicious vessel*'. No trace of such a named vessel could be found in any shipping publication we carried on board. At 1450 we closed up to Action Stations and all our main armament trained to starboard on this unknown ship. At 1519 we intercepted a further distress signal sent on a commercial

wavelength reading '*RRR Taiyang still chased*'. By 1528 we were well placed on the unknown ship's beam.

Our commanding officer, Captain J. Esdaile was ably assisted by our navigator, Lieutenant J.W. Penny who had served for many years in the merchant navy, and had experience of the construction details of a host of merchant ships. He quickly produced a

photograph of the German ship *Ramses* from a pool of 'German Armed Merchant Vessels and Merchant Vessels'.

The ship under observation at this stage flew a Norwegian flag, but in all essential details she appeared to be *Ramses*. With *Adelaide* 12000 yards from the target, it was time for decisive action. Captain Esdaile was not going to be caught approaching too close to this ship. He was aware of the fate of Captain Burnett and HMAS *Sydney*. On 19 November 1941, she was sunk in a fiercely fought battle with the German raider *Kormoran*, resulting in the loss of *Sydney's* entire crew of 645 officers and sailors.

By 1530 *Ramses* was almost stopped in the water. Two boats were lowered on her port side. Some eight minutes later we saw an explosion at her stern. The wind quickly blew smoke to cover the whole of her port side. Only her masts and the top of her funnel remained visible. *Adelaide* opened fire, as did *Heemskerck*, and *Ramses* sank at 1552.

The crew had all abandoned the ship, except for her captain, the OIC of the gun crews, and the wireless officer, all of whom were completing the extensive scuttling arrangements. However, hits from *Adelaide's* third salvo quickly hastened their



departure. As *Ramses* slipped beneath the surface, her main 6-inch armament, the wooden gun complete with its wooden platform, gently floated off. We suddenly realised why we had not been subjected to fire from that source.

*Heemskerck* was ordered to rejoin the convoy and we busied ourselves with picking up the survivors. Seventy-eight crew were now prisoners of war, and ten allied merchant sailors were suddenly no longer prisoners but free men again. How the vagaries of war may suddenly change one's luck! Then a dog and a pig swam alongside, to be quickly rescued. My most vivid memory of this action was the sight of our sailors stopping the rescue of the German survivors to get the dog and pig safely on board, showing their priority in the rescue operation. I became quite attached to the dog, but after our arrival in Fremantle, where we disembarked the allied sailors and the German POWs, the Australian quarantine authorities insisted on it. I believe the pig was disposed of appropriately en route to Fremantle.

### Conclusion

Our sharp lookout located *Ramses*, a quick identification sealed her fate, with the combination of scuttling charges and accurate allied gunfire preventing her valuable cargo reaching Germany. Ten allied sailors were freed to fight again and for the 78 Germans, the war was over.

### Post Script

In 2003 Ward Carr, an American freelance journalist living in Germany, contacted me. By pure chance his father-in-law had been with the Africa Corps in World War II, and he had a cousin who had served in the German Navy. Willy Schrufer had been a member of the prize crew that took over the British merchant ship

*Speybank*, captured in the Indian Ocean on 31 January 1941 by the armed raider *Atlantis*. *Speybank* was sailed back to Germany, converted to an auxiliary mine layer and renamed *Doggerbank*. Willy sailed to Kobe in this ship, and was transferred to the *Ramses*. He thus became a POW and was on board *Adelaide* at the same time as myself in November 1942. Indeed a small world!

In August 2004 an email from Helena Mende in New Zealand informed me that her father-in-law, Gerhardt Emil Herman Mende, like myself now 82, had also served in the *Ramses* as a merchant seaman. He was a POW in Australia until the war ended, was repatriated to Germany and then migrated to New Zealand where he settled and married. Oh the wonders of the Internet - I never cease to be surprised just how it may link lives together across the world.

From 1942-2004, the blockade-runner *Ramses* is the common link.



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## Operation Celesta - January 2004

Commander John Vandyke, RAN\*

On 14 January 2004 HMAS *Warramunga* sailed from Fleet Base West at HMAS *Stirling* for the Heard Island Macquarie Island (HIMI) Exclusive Economic Zone. The reason for the patrol, to seek and apprehend any fishing vessels found to be fishing illegally in the HIMI EEZ.

Preparations had proceeded at a frenetic pace in the previous week with training and re-qualifications for the boarding party in fast rope insertions the most crucial. Storing also proceeded apace with the most important aspect being the embarkation of the cold weather stores, most notably the clothing. There were some members of the ship's company who were going to the HIMI for a second time but nothing they could say would prepare us for the cold, a most significant aspect of operations in the Southern Ocean.

The transit to the HIMI took one week. The first two days were used to hone the fast roping skills of the Boarding Party and fully integrate HMAS *Canberra's* Seahawk, which had been loaned to *Warramunga* for the operation. The reasoning for concentrating this training early in the transit was the expected worsening weather that might preclude further training. This proved to be the case as predicted, with the temperature and barometer plummeting, the further south we went. This was made all the more noticeable having sailed away from a WA summer.

During the transit the planning continued with daily meetings of the Command Team, the embarked Australian Fisheries Management Authority (AFMA) officers and Customs officer. The concept of operations that had been decided on quite early remained the broad plan and was refined during the transit. With weather the primary factor, the aim was to approach any vessels detected after the passage of a cold front. These fronts pass through the area every 36 hours or so and the weather abates for several hours after the passage of the front permitting boarding operations. Discussions were also conducted about how a man over board might best be recovered noting the expected very low water temperatures. The plan was that the helicopter would remove the fast rope and then lower the harness to the person in the water and recover him

- simple it was thought. This plan was briefed and all the boarding party was taken through the routine of putting a harness on. The AFMA officer's warning to remember that 'they are only fish' was a very subtle reminder though of the conditions, and dangers, likely to be encountered.

*Warramunga* commenced her patrol about a week after leaving *Stirling* and as luck would have it, detected a vessel on radar at dusk the following evening. The gas turbine was brought on line and we started closing. The contact increased speed but *Warramunga* was easily able to overtake the vessel and commenced trying to gain radio contact with it. Eventually the vessel identified itself as the *Maya V*. Close passes were conducted on the vessel using the 10-inch signal lamp for illumination, confirmed it as *Maya V* and she was instructed that we would board her the following morning.

At sunrise the weather was assessed as suitable for helicopter operations and boat operations, a requirement in the event of the helicopter ditching. The helo was safely launched and *Maya V* was instructed to stand by to receive the boarding party. After a reconnaissance, the decision was taken in the helo to insert the boarding party amidships, just forward of the bridge. The rope was deployed, the first man slid down the rope, was lost from sight on *Warramunga's* bridge and was quickly seen to float clear astern of *Maya V*. MAN OVERBOARD!! The plan that had been briefed was executed with the fast rope being disconnected from the winch hook and recovery strop hooked on. The helo made an approach to the man and the strop was lowered. It quickly became apparent on *Warramunga's* bridge that he was struggling to get into the strop due to the very quick effect the water temperature had had on his dexterity, and the obstruction of his backpack. The decision was quickly taken to launch a rigid hulled inflatable boat (RHIB) to recover the man. This went smoothly and the RHIB swiftly closed the man and safely recovered him into the boat.

The RHIB returned alongside *Warramunga* with four people in the boat, the two boat's crew, the casualty, and a member of the ship's medical emergency team. The medical sailor was forward

\* Commander Vandyke is the Commanding Officer of HMAS *Warramunga*.

shielding the casualty, who was lying in the bottom of the boat; the bowman went forward and safely connected up to the boat rope. The weight of these three people forward though, combined with a freak wave, saw the RHIB fill with water and slowly turn turtle, tip all into the sea, break the staghorn from the boat, and float clear astern. There were now four members of *Warramunga's* ship's company in the near freezing water: 2 degrees Celsius, and an air temperature of minus 13 degrees Celsius with wind chill.

The response from those on board was totally professional in the face of this life-threatening situation. The second, and only remaining RHIB, was quickly readied for launch, and when the ship was on an appropriate course, it was lowered. The people in the water had reacted in accordance with their training and were grouped together providing support for the original man over board exactly as per the book. The RHIB arrived alongside them, and after some difficulty, noting the hypothermic state of the people, safely recovered all four.

The next challenge was to get all back on board *Warramunga* safely. The requirement for the first man to be hoisted as near to parallel noting his hypothermia was the most pressing factor. The XO proposed using the man over board recovery davit on the bridge wing with the RHIB keeping station beneath; this was done. Noting the concerns about the first man, a double lift was undertaken with the swimmer of the watch being lowered and two strops being placed on the hypothermic man to bring him up, essentially in a ball, to avoid a vertical position with its attendant dangers. This was successful, with the swimmer of the watch sustaining two broken ribs in the process. The remaining men were all successfully recovered from the RHIB whilst it kept station under the davit. The RHIB itself was then safely recovered. The whole evolution, from the lowering of the fast rope to the recovery of the boat, took approximately 58 minutes. The professionalism and courage displayed by the whole ship's company throughout was nothing other than exemplary, and all lived up to the ship's motto, 'Courage in Difficulties'. Of particular note though is the exceptional bravery of the first man down the rope and the RHIB crews.

Any further attempts to board that day were suspended due to the worsening weather, which was predicted with the passage of the cold front. That afternoon both ships returned to where *Warramunga* had first detected *Maya V*. This was to search for any buoys that might be in the vicinity. Due to the vigilance of the lookouts, some were sighted and several were recovered.

The recovery was risky in itself however noting the conditions, with the recovery lines on the forecastle cutting through the guardrail like the proverbial knife, and then parting, shooting a grapnel hook across the forecastle. Sufficient buoys were safely recovered however, again displaying tenacity in the ship's company that was conspicuous.

The next day dawned fine with unexpectedly suitable weather for flying and boat operations. The decision was taken to board *Maya V* and boarding and flying stations were piped. Following the insertion of a member of the aircrew, the fast rope was dropped onto *Maya V* and the first stick of the boarding party was inserted. 'Low Threat' was quickly called and the embarked fisheries officer was lowered to the deck. He subsequently found sufficient evidence to apprehend the vessel on the suspicion of illegally fishing in the HIMI EEZ. Noting the unpredictable weather the steaming party transfer commenced immediately via a high line transfer. Despite a defect in the helo half way through which caused a momentary lapse in the momentum of the transfer, it was completed successfully and the long transit to Fremantle was commenced.

Two days later *Warramunga* rendezvoused with HMAS *Success*. Whilst in company with her the opportunity was taken to transfer a fisheries officer and several others, plus some stores. The weather was marginal for fuelling though and noting the sea state and low water temperature, and the proven long range of *Warramunga*, the decision was taken not to fuel and *Success* was detached to proceed in accordance with previous orders by *Warramunga* as CTG.

*Warramunga* arrived in Fremantle on 1 February, after some 18 days at sea, in at times appalling conditions, having achieved what she had been sent to do: search for, board and apprehend any vessels suspected of illegally fishing in the HIMI EEZ. There was a large media contingent on the wharf on arrival and the ship was met by the Minister for Customs, the Minister for Fisheries and the Maritime Commander. Two days later the Prime Minister also visited to personally thank the ship's company of *Warramunga* for a job well done.

*Maya V's* cargo is the largest cargo of Patagonian toothfish apprehended to date.



# Command and control of maritime operations -the DJFHQ(M) and tactical warfare commanders

Captain Peter Leschen, RAN and Lieutenant Commander Allison Norris, RAN\*

For some thirty years, ADF command and control arrangements have been becoming steadily more joint in nature, and this has been reflected in evolving training, doctrine and organisation. The options for command of ADF operations now include combinations of Joint Operations Command, the four Component Commands, the Deployable Joint Force Headquarters and Northern Command, the Joint Force Air Component Commander and associated Air Operations Centre, the Deployable Joint Force Headquarters (Maritime) and Tactical Warfare Commanders (TWC), and a range of Service headquarters and commands.

Within the Maritime Component, the key command roles fall to the Maritime Component Commander, Commander DJFHQ(M) and TWCs, as well as the commanding officers of individual units. This article describes the way the DJFHQ(M) and TWC arrangements have evolved, and how they contribute to both the preparation of forces and the subsequent command and control of assigned forces for operations.

## Historical Background

The DJFHQ(M) was originally formed in January 1999. In June that year the Chiefs of Staff Committee (COSC) endorsed a proposal that Commodore Flottilas (COMFLOT) and DJFHQ(M) staff provide both the Naval Component of the existing DJFHQ based on HQ 1 Div at Enoggera, and an embryonic maritime JTFHQ. Almost immediately the DJFHQ(M) was deployed to support operations in East Timor, and the organisation has steadily evolved since then.

In 2001 the TWC organisations were created to plan, conduct and command operations and contribute to the operational preparedness and effectiveness of the Fleet. It was envisaged the TWCs would provide enhanced capability to plan and execute operations at sea, over and above what was possible for the command team of a private ship. There are now three TWCs, being the Commanders of the Surface, Amphibious and Mine Warfare and Clearance Diving Task Groups

(COMAUSSURFTG, COMAUSATG, and COMAUSMCDTG respectively). Throughout 2002-03, elements of the Surface Task Group were deployed to the Persian Gulf conducting coalition CTG duties.

In addition to these high profile operations, personnel from the DJFHQ(M) and TWCs have been involved in a wide range of exercises, including *Crocodile 03*, *RIMPAC 04*, *Bersama Lima 04*, as well as a range of smaller joint and predominantly single Service exercises, all aimed to ensure that JOC Operational Preparedness Requirements (OPR) could be effectively met. Additionally, work has been progressing to ensure that these organisations would be properly positioned for the forthcoming collocation of the four component commanders with JOC at Bungendore.

## Roles and Responsibilities

Both the DJFHQ(M) and TWCs reside in COMFLOT's organisation within Maritime Headquarters and are responsible to him, although in some cases the operational chain of command for TWCs commanding assigned forces may not include COMFLOT. COMFLOT's responsibilities fall into two areas; the preparation and employment of forces. As Head of the Sea Training Group (STG) he is responsible for the preparation of maritime command forces to unit and mission readiness. As the Commander DJFHQ(M) he is responsible for the employment of assigned forces, providing the command and control required for exercises and operations.

The TWCs also have responsibilities for both the preparation and employment of forces. They have a particular focus on task groups rather than individual units, but also provide specialist skills in the work ups of amphibious and MCM forces. They fit within the DJFHQ(M) structure for force employment and command and control functions, but also need to have a close relationship with STG, Tactical Development Group, the Maritime Operational Analysis Centre, the Force Element Groups, and all the other organisations which

\* Captain Leschen is the Commander Surface Task Group and Lieutenant Commander Norris is the Operations Officer.

contribute to the operational effectiveness of the Fleet.

The mission of the DJFHQ(M) is to plan and conduct combined, joint and single service maritime predominant operations and exercises at the operational and tactical levels. The DJFHQ(M) must be prepared to command joint and coalition operations ranging across the operational spectrum, including maritime, amphibious and advanced force warfighting operations, maritime surveillance and interdiction operations, non-combatant evacuation operations, peace support operations, aid to civil organisations and the provision of humanitarian assistance and disaster relief. In many cases the warning time will be very short. Most of these maritime focussed operations will occur away from the Australian mainland, or in remote areas of Australia's maritime approaches, usually in a littoral environment. Stemming from these requirements, the DJFHQ(M) roles are to:

- Plan and conduct operations and PMSA exercises as directed, at the tactical level;
- Support AUSFLTSTG as required for environmental specific, or task group level work up activities;
- Provide deployable staff as required to contribute as either Commander Joint Task Force (CJTF), Maritime Component Commander (MCC), Commander Task Group (CTG), Sea Combat Commander (SCC), Commander Amphibious Task Force (CATF) or Mine Countermeasures Tasking Authority (MCMTA);
- Assist in the development of environmental specific doctrine and tactics; and
- Ensure that as the organisation matures lessons are learned and acted upon.

From these roles it can be seen that the DJFHQ(M) is predominantly focussed on the employment of forces, but that it also contributes to their preparation through exercise planning, doctrinal and tactical development and lessons learned processes. The CTG, SCC, CATF and MCMTA roles that might be considered the domain of the TWCs are DJFHQ(M) roles, confirming that the TWCs are actually an integral part of the DJFHQ(M).

### **DJFHQ(M) Organisation and Structure**

Form should follow function, so the DJFHQ(M) organisation and structure must be able to provide the range of command and control elements listed above to meet the requirements of a broad range of operations and exercises.

In order to do this, the DJFHQ(M) includes a

core staff and the three TWC organisations. The core staff are focussed on the CJTF and MCC functions, often ashore, while the TWCs are focussed on the CTG, SCC, CATF or MCMTA functions, usually at sea. These command functions are the central reason for existence of the DJFHQ(M) and TWCs and, with the exception of CJTF and SCC, all have been exercised during 2004. Commander DJFHQ(M) and COMAUSSURFTG have assumed the MCC role in *Bersama Lima* and *Vital Launch/Vital Prospect*, as well as performing coalition command roles in RIMPAC. COMAUSSURFTG and COMAUSATG have both been CTG or CATF at sea in exercises such as *Tasmanex* and *Sea Eagle*, and COMAUSMCDTG has been involved in the MCMTA function in *Mulgoggor*, *Dugong* and *Bersama Lima*. COMAUSSURFTG will be SCC and COMAUSATG will be CATF in *Talisman Sabre 2005*, and Commander DJFHQ(M) is likely to be SCC in RIMPAC 2006. Despite the reduction in operational deployments since 2003, therefore, the DJFHQ(M) and TWCs are still regularly performing their command roles.

The situation is, however, complicated by the small size of the DJFHQ(M) organisation and the broader force preparation roles that need to be taken into account.

First, DJFHQ(M) is a small organisation, with strictly limited numbers of people, especially highly qualified warfare officers and specialists. This means that, in many situations, neither the core staff nor the individual TWCs will be able to deploy without augmentation from the rest of the DJFHQ(M). For example, the TWC deployments to the Persian Gulf between 2001 and 2003 drew heavily on DJFHQ(M) and other personnel in order to mount and sustain them. Similarly, exercises such as RIMPAC and *Vital Launch/Vital Prospect* mainly involve the core DJFHQ(M) staff, but the TWCs often provide both the Commander and some key staff. The COMAUSATG and COMAUSMCDTG organisations have more capacity to operate autonomously in their specialist areas. Nevertheless, for anything more than a small operation or exercise, it makes sense to regard the DJFHQ(M) and TWCs as a single integrated organisation which can provide deployable command elements to meet particular purposes, subject to some limitations on concurrency.

Second, the integrated DJFHQ(M) and TWC organisation has to support the preparedness as well as the employment of assigned forces. This includes tactical development, operational analysis, performing duties as Exercise Director,

as well as maintaining a role in assessment of fleet units. This requires that DJFHQ(M) and TWC tasking be carefully coordinated with that of STG and other Maritime Command organisations to ensure that tasks and initiatives can be effectively implemented and completed.

To improve the integration and coordination of these organisations, some reorganisation of the DJFHQ(M) and TWCs has occurred. The existing TWC titles and roles are unchanged, but key staff are now dual hatted within the DJFHQ(M) organisation for the N3/N5 planning and operations and N7 development functions. COMAUSSURFTG is to be dual hatted as Deputy COMFLOT, providing a point of focus for DJFHQ(M) integration and for better coordination with STG.

### Operational Effectiveness

The need to better coordinate preparedness work is a key issue for the DJFHQ(M) and TWCs, but it also extends across Maritime Command as a whole. A closely related initiative has been the establishment of the Maritime Operational Effectiveness Coordination Group (MOECG) within Maritime Command. As the title suggests, the aim of the MOECG is better coordination of all efforts to improve operational effectiveness, including operational analysis and tactical development, exercise and FAS planning and execution, and the development of better guidance on operational standards and benchmarks. This ensures that our training is properly aligned with the JOC OPR. Chaired by CSO(O), the membership includes the three TWCs, DRANTEAA, CST and CSO(W). The group therefore contains the key members of COMFLOT's staff, from both the DJFHQ(M) and STG, as well as key plans, operations and policy staff officers in Maritime Headquarters.

### The Future

A key theme of this article has been the need to both prepare and employ forces for operations, and the resulting command and control and preparation roles of the DJFHQ(M) and TWCs. These roles are conceptually different, and Maritime Headquarters and the DJFHQ(M) have already been set up to take account of the differences. The collocation of Joint Operations Command and the four components at Bungendore will, however, result in a very real geographical separation. The MCC Operations and Plans Staff will move to Bungendore, leaving the DJFHQ(M), TWCs and other 'waterfront' functions at MHQ in Sydney.

This article is not the place to discuss all the

issues that this will raise. It seems inevitable, however, that coordination of operations and plans functions in Bungendore with waterfront functions in Sydney will present some challenges. The initiatives discussed in this paper about the increased integration of DJFHQ(M) and TWCs, and increased coordination of work with STG and through the MOECG, should be considered in the light of the forthcoming move. They provide the basis for a framework to cope with the increased coordination challenges that will result from the move.

### Conclusions

The key purpose of the DJFHQ(M) and TWCs is to provide the ADF with a variety of command and control options for maritime operations, including CJTF or MCC to the DJFHQ for a larger operation, and tactical command at sea. It must also address a broader range of preparedness issues that cut across both STG and Maritime Command as a whole. These tasks have not greatly changed, although the balance of effort changes over time depending on the operational demands being placed on the ADF. The DJFHQ(M) and TWCs have performed well in a wide range of operations and exercises over the last few years, which effectively validates the reasons for setting these organisations up in the first place, and the basic soundness of the resulting organisations.

Both personnel constraints and the broad range of tasks required are, however, pushing both the DJFHQ(M) and TWCs towards increased integration, and towards improved coordination with the rest of Maritime Command. While they may be employed independently, for many of their roles it makes more sense to regard them as a single, integrated organisation. This is essential if we are to gain maximum operational benefit from scarce resources and fully meet the command and control requirements of the JOC OPR.



## RAN EXERCISES

### Exercise Dugong 04

*Lieutenant Michael Parker, RAN\**

*Dugong is an annual exercise held primarily on the East Coast of Australia. Building on MCD skills honed in more structure exercises such as Mulgogger that are traditionally held early in the calendar year, Dugong serves to develop and maintain proficiency of MCD assets in a more advanced scenario driven environment. Successful completion of the exercise is a sound stepping stone for subsequent large scale exercise such as the United States led Talisman Sabre 05 to be held in Shoalwater Bay, Queensland in June 2005.*

Profiteria desperately needed access to modern port facilities in order to support its failing economy. Egaliteria, its smaller northerly neighbour, refused to allow Profiterian access to the nearby Port of Eden. Amongst rising tensions between the two countries, a small group of Profiterian militia took control of wharf at Eden. After recapturing the facility, Egaliterian forces noticed suspicious objects in the waters around the wharf. To complicate the situation, the two Profiterian fishing vessels, missing for several days, had been located inside Port Eden but without their strange-looking cargo. Cautious of the potential threat of sea mines, Egaliteria closed the Port of Eden and obtained United Nations approval for Australian support in re-opening the Port by 21 September 2004 and ensure merchant traffic was uninterrupted.

This was the scenario faced by the Commander of the Minewarfare and Clearance Diving (MCD) Task Group, Commander Geoff Uren, RAN, and the MCD Task Group on 18 September 2004 at the commencement of the tactical phase of Exercise Dugong 04. Conducted in both the Jervis Bay and Eden areas of New South Wales, Dugong involved over 200 personnel at sea and in supporting roles ashore at the local MCD Headquarters that had been deployed to HMAS Creswell. Along with MCD Task Group staff, the headquarters comprised of supporting units including the Mine Warfare Auxiliary Sweep Group, Minesweeping Control Systems Cell, Stonefish Exercise Mine Cell, Operational Support Unit Analysis Cell and a RAAF Explosive Ordnance Disposal Flight from 395

Expeditionary Combat Support Wing. Although self sufficient, the Minesweeping Droneboat Element were co-located at the headquarters for ease of operations.

During the two weeks prior to the tactical phase, the Australian Survey Vessel (ASV) *Whyatt Earp* completed a bathymetry analysis of both the Jervis Bay and Eden exercise areas. The MCD Route Survey Unit, also embarked on the ASV, utilised a singlebeam sidescan sonar to analyse the inshore seabed of the same areas and classify bottom contacts whilst the Mine Sweeper Auxiliary *Bandicoot* conducted a similar analysis in the offshore zones. Lieutenant Lincoln Trainor, the deployed Military Geospatial Officer, provided a Rapid Environmental Assessment (REA) of the data to Command, enabling units to more accurately predict sonar performance and increase their efficiency at prosecuting contacts on the sea floor.

At midnight on 19 Sep 04, the two Mine Hunter Coastals (MHC) HMA Ships *Gascoyne* and *Huon* began clearing a route to the Egaliteria port of Eden using the REA data as a baseline. By comparing any new sonar contacts with those already listed in the REA library, repeated investigations of contacts assessed to be non-mines could be avoided, thereby saving time and effort. Seven hours later, elements from Australian Clearance Diving Team Four (AUSCDT FOUR) inserted onto the Eden wharf via an 817 Squadron Sea King helicopter and commenced operations to clear the wharf and surrounding waters of any mines or booby traps. Over the next three days, the threat posed by the mines layed by the two Profiterian fishing vessels had been removed and the MCDTG recommended that Egaliteria re-open Port Eden. On the morning of 21 September 2004, *Gascoyne* safely lead HMAS *Ballarat* through the cleared channel and to their respective berths at the Eden wharf, marking the end of Exercise Dugong 04.

### Exercise Bersama Lima 2004

*Captain Peter Leschen and Lieutenant Rachel Jones\**

During the period 10-25 September 2004, a total

\* Lieutenant Parker is the Training Officer Mine Warfare within the MCD Task Group.

\* Captain Leschen is the Commander Surface Task Group and Lieutenant Jones is the Legal Officer HMAS Kuttabul.

of 31 ships, 60 aircraft, 2 submarines and more than 3,500 personnel from Australia, Malaysia, New Zealand Singapore and the United Kingdom participated in Exercise *Bersama Lima 04*, a Five Power Defence Arrangement (FPDA) exercise. The ADF contribution was larger than that for RIMPAC 2004, including HMA Ships *Anzac*, *Arunta*, *Westralia*, *Sheean*, *Hawkesbury*, *Yarra*, *Geraldton* and *Dubbo*, CDT One, 92 WGDETA (2 x AP3) including 10 and 11 Sqn, 75 Sqn (10 x F/A-18) and 33 Sqn (1 x B707) as well as a 44 strong group of ADF personnel from all Services in the *Bersama Lima* Headquarters ashore in Singapore. These forces took part in a harbour phase focussed on briefings, training and social interaction, a scheduled 'Force Integration Training' period at sea and ashore, and a 'Live Exercise' involving tactical freeplay.

In the 33 years since its inception, the FPDA has provided a framework for regional stability with the continued engagement of the Australia, New Zealand and the United Kingdom as partners for the defence of Singapore and Malaysia. For Australia, it also furthers regional engagement and military training objectives. Over this period, FPDA exercises have grown in scale and complexity. Moreover, the changing global security landscape has made it necessary for the FPDA to consider trans-national terrorism and other non-conventional threats to regional security. In response to these changes, Exercise *Bersama Lima 04* included a number of innovations.

Firstly, an operational level headquarters was set up at Singapore's Paya Lebar Air Base. The headquarters was the largest to date for any FPDA exercise, involving some 270 personnel from all five countries in EXCON, joint and component staffs, supported by a command support system to provide shared situational awareness. This allowed enhanced combined and joint planning and execution of operations, including more sophisticated ROE play. It also enabled the introduction of Civil Military Coordination and Media issues for the first time. This headquarters worked very successfully, but also placed greater demand on FPDA communications systems. This highlighted the limitations that have been evident in past exercises, to the extent that this issue has the potential to limit further exercise developments. Hopefully the FPDA nations can develop a way ahead to resolve this issue in the relatively short term.

Secondly, Exercise *Bersama Lima 04* involved maritime security drills at sea. In both the serialised program and freeplay, units from all FPDA countries were involved in maritime

interdiction exercises to locate, track, interdict, board and search vessels at sea. This was a first and important step in developing the capacity of FPDA nations to deal with non-conventional threats.

Exercise *Bersama Lima 04* met its objectives most successfully, and has set some new and productive directions for this exercise series. Headquarters Integrated Air Defence System (HQIADS) has ambitious plans to further develop these innovations in future exercises. For the ADF, the exercise provided valuable tactical level training with lots of assets in the complex environment of the Malaysian peninsular and South China Sea, as well as providing people with the opportunity to consider operational level issues. The future for *Bersama Lima* looks bright.

### Exercise *Swift Eagle 2004*

Major Philip Blowers\*

With many of the world's 'hot-spots' accessible by sea, and most nation states in Australia's Regions of Interest consisting typically of archipelagic island clusters, it can be expected that this will be the principal environment that the Australian Defence Force (ADF) will operate in, in the foreseeable future. As the majority of these states exist alongside or in close proximity to the sea, expeditionary forces with sufficient combat weight, capable of being deployed, redeployed, supported and sustained from Sea-based platforms, will prove most effective and flexible across a variety of scenarios, at both ends of the conflict spectrum.

As part of developing this maxim, the ADF conducted Exercise *Swift Eagle 04*, in September 2004, around the fictional island nation of 'Capronesia' (amazingly, looking like the North Queensland towns of Innisfail, Tully, Atherton and Mourilyan and their surrounding countryside). The exercise involved the deployment of forces to Capronesia to conduct a Non-Combatant Evacuation Operation (NEO) of Australian and Approved Foreign Nationals, an activity that occurred in recent times and remains a very real potential requirement in the future. One only has to remember the evacuation of Australians from the Solomon Islands in 2000 to acknowledge the need for practicing these situations.

At the heart of *Swift Eagle 04*, was the deployment of a large slice of the RAN amphibious capability in the form of the 8500t

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Landing Platform Amphibious (LPA), HMAS *Kanimbla* (Commander S Woodall), the venerable 5800t Landing Ship Heavy (LSH), HMAS *Tobruk* (Commander N Bramwell), and three Landing Craft Heavy (LCH), HMA Ships *Betano* (LCDR M Oborn), *Labuan* (LCDR D Muller) and *Tarakan* (LEUT A Willmore).

However, the maritime environment is not just the domain of the RAN! Intimately, linked to the RAN, are the Army's amphibians - in the form of the Landing Craft Mechanised Mark 8 (LCM-8), Lighter Amphibious Resupply Cargo 5 tonne (LARC-V) and the Amphibious Beach Team. These soldiers, from 10 Force Support Battalion, operate the Army's fleet of Landing Craft and provide the Beach Control element for the Landing Force to get ashore. Three LCM-8 deployed on the exercise, embarked in the LPA and LSH. The other Army water assets embarked in *Tobruk*. And another surprise, the Army operates in the air. The 5<sup>th</sup> Aviation Regiment operates the S70-A9 Blackhawk helicopter, of which four were embarked in *Kanimbla*. The Amphibious Task Force was commanded by Commander Australian Amphibious Task Group (COMAUSATG), CAPT P.J. Murray, RAN.

However, the presence of this formidable fleet in a suddenly strife-torn country does not guarantee the safe passage of Australian and foreign expatriates wanting to escape a rapidly deteriorating situation. As in the majority of conflicts, it requires manpower to be placed in the area of potential harm to guarantee security, to ensure that the job is done. This task fell to the men and women of the Army's Townsville-based 3<sup>rd</sup> Brigade, commanded by BRIG D Morrison.

On the morning of 19 September 2004, a combined air and surface assault was conducted into the sleepy hamlet and training area of Cowley Beach. This amphibious assault landed nearly 400 troops and some 50 vehicles in eight hours. Concurrently, 3<sup>rd</sup> Battalion, Royal Australian Regiment (3 RAR), in RAAF C-130 (Hercules) and DHC-4 (Caribou), conducted a Battalion-group parachute insertion to secure an airfield further inland. This airfield was critical to ensure that the Follow-On Force could deploy into Capronesia and commence air evacuating Australian nationals. The Amphibious force was tasked with linking up with the parachute inserted force and then continuing further inland to establish Evacuee Assembly Areas and Collection Points.

Over the next 10 days, *Kanimbla* acted as the Command and Control platform for the Brigade Headquarters of 3<sup>rd</sup> Brigade, a first for both the Army and RAN, based on the communications

suite that the LPA is capable of providing to the Landing Force. Whilst remaining on station, *Kanimbla* also acted in the logistic support role, providing daily water and resupply of various stores and ammunition embarked by the Army. These items being moved ashore either by the various Army and RAN Landing Craft or the deployed helicopter force, including the CH-47 (Chinook).

Due to her inherent capabilities, *Kanimbla* was also the fuel tanker for the embarked Blackhawk helicopter force and other helicopters that had deployed to the Area of Operations (AO). Additionally, she conducted ship-to-shore fuel transfers utilising the newly introduced Tank Fabric Collapsible - Marine (TFC-M). The TFC-M is a 32000 litre fuel bladder that sits in the well-deck of an LCM-8 and is used to bring fuel from ships at sea to a Beach Landing site, where it is pumped out, using a flexible pipeline system into the land-based field 'fuel farm'. A total of 180000 litres of aviation fuel was transferred to the shore by this means.

*Tobruk* was not idle during this phase either. She was tasked with being prepared to evacuate up to 320 evacuees from 'Capronesia', back to Australia. As part of this evacuation, the ships company practiced the full gamut of evacuee handling and care procedures, prior to proceeding back to Australia to deliver her 'evacuees'. On completion of this task, she returned to the AO, to continue supporting the forces ashore and to be prepared to re-embark the land force, on completion of their task.

By the 28<sup>th</sup> September, all Australian and foreign nationals had been evacuated to Australia, and a hostile rebel group of Capronesians had been dealt with, as requested by the Capronesian Government, so that a return to peaceful negotiations could occur. The task had been completed and the Amphibious Task Force re-embarked the ships for their return home.

Exercise *Swift Eagle 04* successfully demonstrated the advances made by the ADF's Joint 'expeditionary force' capability. The ability of the RAN and Army amphibious assets to move and sustain an effective and tailored force, combined with the strategic airlift capability, provided by the RAAF, has shown how the ADF can realistically conduct regional evacuation and security/stabilisation operations within Australia's region of interest.



**Exercise RIMPAC 2004***Lieutenant Commander Paul O'Driscoll, RAN\**

Exercise RIMPAC (Rim of the Pacific) is a bi-annual exercise held in the vicinity of Hawaii. Participating nations included Australia, Canada, United States of America, South Korea, Chile and Great Britain. The United States of America and Japan conducted a bilateral exercise concurrently; however there was no formal interaction between the two exercises. The exercise highlighted the Command, Control, Communications, Computers and Intelligence (C4I) challenges confronting RAN units when participating in large scale operations/exercises with United States Navy (USN) forces. It has been four years since RAN surface units have been tasked to support RIMPAC and in that time considerable technical innovation has occurred. The demands, in particular, on Task Group (TG) units to maintain almost constant Combined Enterprise Regional Information Exchange (CENTRIX) Four Eye connectivity, in addition to international connectivity with non traditional operating partners such as the Republic of Korea Navy (ROKN) were unlike any other exercise to date. It should also be noted that the USN has displayed interest in increasing the number of participating nations for Exercise RIMPAC which will only add to future communications complexity.

**Scenario Summary**

The scenario for the tactical phase of RIMPAC 2004 focused on the notional countries Green, Orange and Purple, superimposed on the geography of the Hawaiian islands. The region is critical to merchant traffic and world commerce. Tensions between the island nations have steadily been increasing and are based on ethnic rivalries, competition for economic resources, conflicting International political alliances and a personal vendetta between the leaders of Green and Orange. Orange is currently under UN sanctions for its treatment of ethnic Green living within Orange borders, disruption of international shipping, and support to terrorism. Purple has a more self-contained approach to international issues. Green is the least prosperous country in the region, but has a liberal democracy and is a strong ally of RIMPAC coalition nations.

In general, the exercise was based on the concept that the UN Security Council had adopted a unanimous resolution authorising the immediate deployment of a multinational coalition force to

stabilise the Hawaiian region, deter Orange aggression, and counter terrorism under Chapter VII of the UN charter.

**Participating Nations**

The Exercise was conducted under CTF 170 - Commander Carrier Group Seven which involved the USS *John C Stennis* carrier battle group and other maritime forces from the US, Canada, Australia, Chile and South Korea, and land force elements for amphibious operations. While Japanese Self Defence Force - Maritime ships were present, the US-JSDFM exercise was conducted independently of RIMPAC.

A large number of Pacific Rim countries were also invited to participate as observers.

**Australian Roles**

Commodore Flotillas (COMFLOT) was the Deputy Commander Multi-National Task Group. HMAS *Newcastle* was Surface Action Group - Alpha (SAG-A) Commander. *Newcastle* also had one S70-B-2 embarked. Other units in SAG-A included Republic of Korea ships ROKS *Chungmugong Yi Sun-Shin* and *Euljimundok*, the Canadian ship HMCS *Regina* and United States supply vessel USNS *Rainier*. HMAS *Parramatta*, with embarked Seahawk helicopter, was allocated to Surface Action Group -Bravo, commanded by HMCS *Algonquin*. HMAS *Success*, with embarked Sea King helicopter, was allocated to the Replenishment Group. HMAS *Rankin*, as part of the combined submarine forces, was generally an adversary for various Surface Action Groups, however submarine versus submarine exercises were also conducted. Other ADF participants included a detachment from AUSCDT, 2RAR and 92WG P3C detachment.

**Exercise Highlights**

There were a number of highlights from the exercise. For *Newcastle* and *Parramatta* the greatest of these were the conduct of a live firing on the former *Spruance* class destroyer, USS *Harry W Hill* and *Parramatta's* tactical Evolved Sea Sparrow Missile (ESSM) firing against a realistic Anti-Ship Missile Defence target. The opportunity to operate with countries such as South Korea and Chile, with which the RAN has only infrequent contact, showed that by using common practices (based on Allied/NATO doctrine) the various participating nations navies could become interoperable in a short period of time. Working within close proximity to the *John C Stennis* also provided a rare opportunity to maintain a minimum level of proficiency in support of aircraft carrier operations.

\* Lieutenant Commander O'Driscoll is the Staff Officer IT Policy in Systems Command.

# RIMPAC 2004

## Wargames on a Global Scale

### Challenges

While interoperability is stated as a highlight, RIMPAC 2004 again reinforced recent RAN experience with respect to the way in which operations are being controlled and the challenges that such developments present. In particular computer and satellite based data communications and information systems are playing a significantly increased role in command and control functions at the tactical and operational level. The remainder of this article will examine a number of those aspects in greater detail.

### Information Systems

The proliferation of information systems has been a double edged sword in maritime operations. While they have enabled the rapid sharing of information, in a lot of cases faster than the traditional formal messaging process, there are a number of concerns that need to be addressed.

First and foremost is the number of disparate systems being required of a small platform such as the FFG or FFH. The current driver for each system is its security classification. In the case of *Newcastle* there are currently fitted two Secret networks (one national and another Allied), a Restricted network and a multi-national system used for sending basic email using High Frequency radio communications.

Highlighting the deficiencies in this approach, it was not possible for *Newcastle* to send an email directly to the South Korean units due to the different security classifications of each of the nations Allied Secret systems. Certainly the facility provided by the USN, which allowed email to be sent through a gateway, was successful but this type of approach to the security issue only serves to slow down information transfer. Where the current catch cry is Network Centric Warfare and one of its goals is to provide for the rapid transfer of information, the current solution can only be considered temporary,

reflecting in some respects the immature nature of the integration of information systems into command and control processes.

The number of disparate systems in use also directly impacts upon the ability to conduct effective information management. This has strained the traditional Action Information Organisation (AIO) processes rather than facilitating the delivery of a fused picture of the battlespace through combat systems, associated tactical data links and formal messaging. Moreover, wide arrays of relatively new information sources now have to be manually monitored increasing the human user interface requirement.

One of the newer sources of information is Instant Messaging. This is a potentially powerful application that enables information to be passed in a near real time manner. The information sent is low bandwidth friendly which is of benefit to Fleet units. These benefits are however mitigated by the current lack of authentication with instant messaging (knowing the other person is who they claim to be) and its use in preference to voice communications. Another disadvantage to the current Instant Messaging arrangements is that it is possible to only 'chat' to another user in the same security enclave. This meant, for example, that *Newcastle* could not 'chat' to either of the Republic of Korea Navy (ROKN) ships. While both nations ships had CENTRIXS systems installed, the ROKN is bilateral with the USN and the Australian is multi-lateral with USN, RN and RCN. While there are a number of initiatives aimed at delivering the "holy grail" of multi-level security, the solutions required are still some time away from being able to provide the required capability.

Another possible solution is to have all nations use a system which has information releasable to all participating nations only. This approach of course is tempered by the previously mentioned issues relating to information management, and

the practical issues surrounding physical installation of yet another independent information system. Until solutions to these problems are found, coalition partners in a multinational force will experience constraints in seamless integration and be reliant on a dominant coalition partner to engineer linking systems arrangements.

### Data Communications

While ships retain HF communications and low bandwidth military communications for the transfer of formal messages and other limited information types, INMARSAT is increasingly being relied upon for all other forms of data communication. The RAN, with the assistance of Information Services Division (ISD), is now capable of providing leased INMARSAT access to its ships. In one of the rarer occurrences, the leasing provides ships with 24/7 connectivity back to the shore network at a significantly reduced cost than using the traditional "dial up" method. Expected savings were in the vicinity of \$10M for the first year. The leased service was provided throughout the RIMPAC deployment to all surface ships.

While this is a significant enhancement to Navy capability, the majority of surface ships still suffer as INMARSAT is the sole communications bearer for Defence Restricted Network (DRN), Defence Secret Network (DSN) and CENTRIX Four Eyes (CFE) information exchanges. While most operations or exercises only require a ship to be on either DSN or CFE, there is also a permanent requirement to maintain DRN access to support the significant administrative information requirements such as the Defence Human Resource Management application - PMKeys and the Defence Payroll application - ADFPay. As INMARSAT is the sole communications bearer for these services, it is a significant potential single point of failure to Fleet units.

This will prove a significant hurdle for RAN surface combatants in exercising more advanced afloat C2 functionality in large coalitions, such as the Surface Forces Commander role executed by the Canadian Navy with an embarked staff in HMCS *Algonquin*. The Canadian experience showed that even with 2 INMARSATS and 128 Kbps (twice the current Australian capacity), approximately 30 user terminals and an ability to be connected to multiple information system security enclaves, staff found their resources at times stretched. This should be compared to the senior RAN ship in RIMPAC which had one INMARSAT at 64 Kbps (similar to a dial up modem) and only one user terminal to execute

SAG Commander functionality.

While there are plans to enhance the INMARSAT installations, these approaches will be largely a stop-gap until projects such as JP 2008 ADF MILSATCOM commences installation of higher bandwidth data communications to fleet units, the limitation of INMARSAT is likely to remain.

### Conclusion

While the RAN has a history of working as a networked force, the rate of change of networking technologies has currently outpaced its ability to install these systems and inculcate their use within doctrinal C2 arrangements. This reality will continue to challenge the RAN's ability to integrate into future coalition forces, particularly those in which the USN has a principle role or lead as they continue to embrace informal instant messaging C2 arrangements in the tactical control of naval forces. Only through a change of process will the RAN be able to address these sorts of issues and achieve a high level of network enabled operations.

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# The Maritime Operational Analysis Centre (MOAC)

Lieutenant Peter Whittingham, RAN\*

The Maritime Operations Analysis Centre was formally opened by Deputy Chief of Navy and Director Systems Sciences Laboratory, DSTO on 24 November 2003. The opening was the culmination of much effort that stemmed, most recently, from the June 2001 Operations Research and Operations Analysis Options Study, chaired by the then, CAPT Peter Lockwood, RAN. In the course of this study, numerous organisational structures were investigated to determine which model best met the needs of the RAN whilst still paying due consideration to resourcing (particularly manpower) constraints. Eventually a minimalist approach was determined as most suitable and affordable with an initial staff of five RAN officers and sailors and three DSTO scientists.

Situated in Level 2, Building 89 at Garden Island, and co-located with the Tactical Development Group (TDG), MOAC has since had a further four DSTO scientists allocated to assist on an 'as required' basis. These extra personnel are located at Maritime Operations Division, Pyrmont, and provide a 'reach back' facility to readily tap into DSTO resources.

The synergy of RAN uniformed personnel and DSTO scientists bring numerous benefits to the organisation. The RAN staff provide the

subjectivity in the form of sound military judgement based on years of training, experience and observations, while the DSTO scientists bring objectivity in the form of analytical studies, experimentation and tests. The MOAC output contributes to measurement and improvements to RAN capability, more of which will be discussed later in this article.

MOAC is overseen by two principals; Director RAN Test Evaluation and Analysis Authority (DRANTEAA) and his DSTO counterpart, Head Maritime Tactics and Concept group (MTC). The principals meet periodically to ensure that MOAC addresses the needs of both the RAN and DSTO and provide higher level guidance.

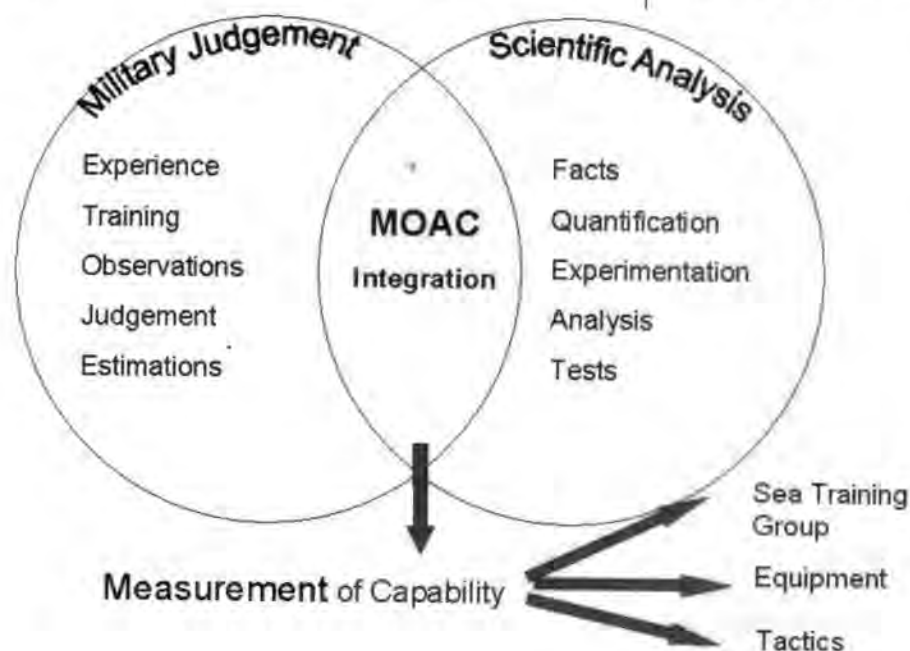
## The Role of MOAC

Because of the relatively small numbers of staff within MOAC, the scope of MOAC tasks has been focussed towards the Fleet in Being. Prospective task sponsors should ensure their proposed tasks meet the following guidelines:

1. The task must relate to the Fleet-in-Being,
2. Analysis should be able to be completed within three months, and
3. Analysis should involve no more than one man-year's effort.

If the proposed task is outside these guidelines, the suggested method for tasking should be through the Naval Science and Technology Requirements and Priorities (NSTRAP) system, which is managed by the Naval Scientific Adviser in Canberra. MOAC has four primary tasks:

1. **Define and Measure Capability.** This is one of the more intellectually challenging tasks in MOAC's remit. By providing a solid framework for objectively defining and measuring capability, it is easier to discuss doctrine, tactics



\* Lieutenant Peter Whittingham joined MOAC in February 2004.

and capability in a more informed objective manner.

2. **Critical Issues Investigation.** With the launch of the MOAC, Fleet Staff planners have a pool of analysts who when required, can assist with the analytical side of operations planning. This could include the provision of an analytical assessment to likely threats, with possible means of reducing risks and/or maximising a unit or Task Group's capabilities. For instance, analysing the particular magnetic and acoustic signatures of a unit or Task Group against the perceived threat may result in a change of tactics or employment of the TG. MOAC can also assist in modelling weapons' profiles before a live firing to determine in advance whether all the firing objectives can be met.
3. **Conduct Analysis in support of Tactical Development.** With the advent of the MOAC, the task of tactical analysis was passed from the Tactical Development and Analysis Group to MOAC, hence the name change from TDAG to TDG. However the co-location of the two agencies allows a complementary approach to tactical development and its validation. In simple terms, the TDG develops the idea and the MOAC validates it through analysis.
4. **Analytical Support to Exercises and Operations.** MOAC work very closely with the RAN Ranges and Assessing Unit (RANRAU) in exercise reconstruction and analysis of selected events. This valuable service was successfully demonstrated most recently in Nov 04 in ASWEX 04 off Western Australia. MOAC staff assisted by RAU presented an analysis of three nominated serials to ASWEX participants in the exercise hot wash up, which identified a number of areas for future tactical development. The benefit of providing timely exercise analysis to all participants while the exercise is still fresh in their minds cannot be understated and is certainly more cost-effective than a report three months later.

### Operational Analysis

Fundamentally, Operational Analysis (OA) is the use of quantitative techniques (statistics, modelling etc) to solve problems and help leaders and operational planners make informed decisions. Further, OA is the analytical study of complex problems, undertaken to provide the responsible managers and staff agencies with a scientific basis for decision on action to improve operations. The term may be used interchangeably with Operations Research (OR). However, in an

academic contact it is understood to mean a form of mathematical method. Outside academia, and in the case of MOAC, the term is more broadly understood to apply to people and agencies applying these methods to problems. OA includes the fields of Management Science, Systems Analysis, Operations Analysis, Operations Research and Weapon Systems Evaluation.

Modern Operational Analysis can trace its roots back to World War II (WWII). The British, led by Professor Blackett, were at the forefront of providing meaningful scientific analysis to their forces. Professor Blackett was a former naval officer, Professor of physics and, after the war, Nobel Laureate who became the first Director of Operational Research at the Admiralty. Often referred to as 'The Father of Operations Research', Professor Blackett was responsible for establishing OR groups in the three British Services.

The development of convoy tactics and recommendations of depth charge settings were two of the numerous contributions of analysts to the success of the allies against the German U-boat wolf packs in the Atlantic during WWII. Scientists involved in OA were directly involved in applying scientific rigour to the problem and using scientific methods to develop solutions to aid the military decision maker with an appropriate course of action.

Closer to home, the RAAF used OA methods in the South West Pacific area during WWII to deny logistic re-supply to the advancing enemy forces. Determining whether to bomb or lay mines to disrupt shipping, and measuring the effectiveness of chosen solutions was conducted to determine the optimal result with economy of effort. OA not only saved lives, but also contributed significantly to the campaign plan.

### The OA Process

The process of OA is based on a structured problem solving or analytical method. The steps involved are:

**Problem Identification.** OA is about solving problems. Without a problem there can clearly be no analysis. There must be an individual or a group of individuals who through their concerns perceive that they have a problem, and have some objectives to be achieved.

To conduct analysis there must be at least two alternative courses of action that have a significant probability of achieving objectives. Furthermore, there must be some doubt in the decision-maker's mind as to which course of action is best in terms of achieving the objectives. Again without this uncertainty what's the point of

analysis? Finally there is a relevant environment (or context) within which the problem is to be solved, which for the MOAC is the Fleet-in-Being.

**Problem Definition.** Applying a system's approach to OA will require that the problem be appropriately defined. This is an essential phase and experience has shown that time spent in problem definition is never wasted. Some analysts have even argued that up to 30% of the effort dedicated to solving a problem should be spent in getting the question right! Therefore potential task sponsors to MOAC should ensure they have a clear aim and objectives. If not, MOAC staff will endeavour to tease out exactly what the customer is after, thus avoiding investigation of the wrong question.

In defining the problem the following factors should be considered:

- What concerns does the operator have that has led to the perception that the problem exists?
- How and when did the problem arise, and has it been correctly identified?
- Will the benefits gained justify the costs of the study?
- Will adequate resources and time be made available to complete the study?
- Who are the stakeholders and what are their areas of responsibility?
- How does solving the problem support the effect the bigger picture?
- What performance characteristics can be used to identify the preferred solution?
- Is there data available to support modelling and validate the solution?

**Model Construction.** Sometimes a dirty word amongst operators, OA relies upon realistic models to investigate real world situations. Not all models are complex and expensive, in fact some brilliant OA models could (and have) been written on the back of a beer coaster!

Irrespective of the size or complexity of the model, it should satisfy the following criteria:

- Simple
- Robust
- Adaptive
- Complete and
- User Friendly

**Deriving a Solution.** This is where the hard work and number crunching comes into play. Depending on the type of model and the problems being addressed the method undertaken to derive a solution will be different.

If the problem was determining the probability of survival against a SWARM attack, deriving the solution might require multiple runs of a

simulation model. If the problem was to optimise the crew rest cycle for aircrew, the solution may be derived through an optimisation calculation.

**Sensitivity Analysis.** Irrespective of the way in which the solution has been derived it is important to understand the dependency of the solution on the input data. This process is known as 'sensitivity analysis'. In the same way that you would never take a mortgage without investigating the change to weekly payments if interests rates changed, no OA solution should be accepted without sensitivity analysis.

The outcome of sensitivity analysis is an understanding of the robustness of a solution. The more robust the solution, the more credibility it should be given.

**Testing the Solution.** Upon completion of the analysis the results and recommendation should be tested. Some of the rules for valid testing include:

- The proposed solution must be validated against observations of actual performance
- The testing must be independent of how the optimal solution was derived
- The data should be representative of future behaviour likely to be observed in the future
- Test should be carried out over a sufficiently long time to ensure the model is robust over time

### MOAC Analysis Definition

MOAC can undertake a wide range of tasks:

**Performance Measurement (PM)** involves calculating pre-defined and agreed performance measures from recorded data using agreed algorithms. PM provides inputs, along with reconstruction, to rapid or deep analysis.

**Exercise Observation (EO)** is the impartial observation of an exercise to identify significant lessons. Exercise observation is usually practiced by sea-riders embarked in various platforms and invariably undertaken by the uniformed members of MOAC.

**Exercise Umpiring (EU)** is the impartial adjudication of exercises, determining outcomes and interacting with exercise progression. Umpiring is usually practised through an exercise control cell.

**Exercise Reconstruction (ER)** is the structured compilation of red and blue force exercise data and subsequent transformation into a geographical, time-based product covering force dispositions, sensor employment, contact and weapon deployment information.

**Rapid Analysis (RA)** is the transformation of exercise data into an analytical product using ratified metrics in a short period of time, usually



to coincide with an exercise "quickrep". Usually conducted in the field or in direct support of field observations. Rapid analysis is useful for operator performance enhancement, for improving training effectiveness and identification of the effectiveness of the tactical deployment of assets.

**Deep Analysis (DA)** is the thorough and detailed investigation of exercise data post exercise in a lab or office environment. This process may involve further mathematical modelling and analysis of critical issues and tactical employment of assets. Information obtained from deep analysis should have lasting value, be strategic in nature and informing to the capability development.

### Progress to Date

MOAC has conducted many tasks since its inception, some of which include:

- Contributed to fast inshore attack craft (FIAC) tactical development
- Analysed Mine Warfare and Naval Gunnery Support (NGS) to Operation Falconer
- Conducted analysis of ASWEX 04
- Tertiary analysis of the Evolved ea Sparrow Missile firing from HMAS *Warramunga*
- Contributed to understanding of capability within the Maritime Operational Effectiveness Coordination Group (MOECG) in Maritime Headquarters
- Assisted TDG and DSTO with validation of Torpedo Countermeasures
- Determined optimal load out for Chaff Launchers from a mixture of Infrared missile decoys, RF missile decoys and Le Scut torpedo decoys.
- Developed a nomogram to assist with the prioritisation of Tactical Development tasks in MHQ's Master Activities List

### Ongoing Benefits

Since opening, MOAC has delivered numerous benefits to the RAN. The successful integration of uniformed and DSTO personnel have educated both operators and scientists into each other's modus operandi. There is an improved responsiveness to the needs of the fleet through the accelerated tasking and reporting methods utilised by MOAC. A more thorough analytical input to Tactical Development and exercise analysis has been observed as a direct result of the efforts of MOAC.

### The Future

As MOAC continues to mature as an organisation, its ability to take on new tasks will develop. At present, MOAC has the following tasks in the

pipeline:

- Define, and subsequently measure, unit and taskgroup effectiveness in the various warfighting disciplines
- Coordinate RAN OA across the FEGs
- Establish the role of Missile Test Director (MTD)
- Contribute to Operational risk assessment
- Provide early input to all exercise and operations planning
- Implement a robust data collection plan for use in operations to enable objective analysis to be undertaken.

### MOAC Points of Contact

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## SEMAPHORE

### Disaster relief - Cyclone Tracy and Tasman Bridge

(Issue 14, December 2004)

During the early hours of Christmas Day, 1974, Cyclone Tracy devastated the city of Darwin with winds in excess of 160 knots, killing 49 people ashore and a further 16 at sea. During the following month, the Royal Australian Navy (RAN) would embark upon its largest peacetime disaster relief operation, involving 13 ships, 11 aircraft and some 3000 personnel.

The 351 naval personnel then based in Darwin possessed only a limited capability to render immediate assistance to the stricken city and its community.<sup>1</sup> Of the four Darwin-based *Attack* class patrol boats, HMAS *Arrow* had sunk under Stokes Hill Wharf with the loss of two lives, HMAS *Attack* was driven ashore at Doctor's Gully by the sheer force of the cyclonic winds, and HMAS *Advance* and HMAS *Assail* were damaged. Darwin Naval Headquarters was destroyed, as was 80% of the patrol boat base and 90% of the naval married quarters. The oil fuel installation and the naval communications station HMAS *Coonawarra* were extensively damaged. Initial relief was limited to search and rescue operations on the harbour foreshore and in waters out to Melville Island. Communications facilities in Darwin, both military and civil, were crippled, and initial communications were dependant upon Army mobile terminals and the communications systems in *Advance*, *Assail* and the motor vessel *Nyanda*.<sup>2</sup>

As the gravity of the disaster became apparent, a naval task force, under the command of the Flag Officer Commanding the Australian Fleet (FOCAF), Rear Admiral D.C. Wells, CBE, RAN, was assembled to render aid to Darwin. A general recall was issued to all personnel. Approximately 50% of all Sydney-based ships' companies were on annual leave, with many interstate. Of the 2700 personnel on leave, 2200 were able to return to their ships prior to sailing, and others subsequently managed to join their ships in Townsville. Volunteers from other Sydney-based ships and establishments filled the positions of those who could not return to their ships in time. All manner of stores were embarked on the deploying ships, ranging from combat bridges, vehicles and building materials down to disposable cutlery.

The response of Operation *Navy Help Darwin*

was swift. The first RAN asset to arrive in the disaster stricken city, on 26 December, was a HS748 aircraft from 851 Squadron, carrying blood transfusion equipment and a team of Red Cross workers. A second HS748 aircraft carrying members of Clearance Diving Team One (CDT1) arrived shortly thereafter. On 26 December HMAS *Balikpapan* and HMAS *Betano* sailed from Brisbane, HMAS *Flinders* sailed from Cairns, and HMAS *Melbourne* (with FOCAF embarked), HMAS *Brisbane* and HMAS *Stuart* sailed from Sydney. Four S2E Tracker aircraft from 816 and 851 Squadrons prepared to fly to Darwin, but were placed on standby and eventually stood down. The following day, HMAS *Hobart*, HMAS *Stalwart*, HMAS *Supply* and HMAS *Vendetta* sailed from Sydney, and HMAS *Brunei* and HMAS *Tarakan* sailed from Brisbane. Nine Wessex helicopters from 817 and 725 Squadrons were embarked in *Melbourne* and *Stalwart*. HMAS *Wewak* subsequently sailed from Brisbane on 2 January 1975. The submarine HMS *Odin* had been nominated to proceed to Darwin to act as a power station, before the authorities determined that appropriate power conversion facilities did not exist in Darwin.<sup>3</sup>

The Director General of the National Disasters Organisation, Major General A.B. Stretton, DSO, arrived in Darwin on 26 December with his staff officers to establish an Emergency Services Organisation Committee. Captain E.E. Johnston, OBE, RAN, Naval Officer Commanding the North Australia Area (NOCNA), was appointed to the committee as Port Controller, with responsibility for controlling the port and its approaches, and for drafting an Emergency Plan in the event of a further cyclone.

As preparations were made for the arrival of the naval task group, Captain Johnston relocated the naval headquarters to his residence, Admiralty House. Following an exchange of signal traffic between FOCAF and NOCNA, it was agreed that the RAN relief force would be allocated responsibility for clearing and restoring 4740 houses in the northern suburbs of Nightcliff, Rapid Creek and Casuarina. HS748 aircraft continued to ferry personnel and stores to Darwin and evacuees south. Evacuees were accommodated in HMAS *Kuttabul*, HMAS *Penguin* and HMAS *Watson* in Sydney; and HMAS *Moreton* in Brisbane. CDT1 was surveying damage to the patrol boats and civilian craft, searching for missing vessels, clearing



Airlifting materiel off HMAS Melbourne (RAN)



Stokes and Fort Hill Wharves, and assessing how to extract the wreck of *Arrow*.

The first ships, *Flinders* and *Brisbane*, arrived in Darwin on 31 December. *Flinders* surveyed the approaches to Darwin to ensure the safe passage and anchorage of the Task Group, while *Brisbane* landed working parties and established communications with NOCNA. *Melbourne* and *Stuart* arrived on 1 January; *Stalwart* on 2 January; *Hobart*, *Supply* and *Vendetta* on 3 January; and *Balikpapan* and *Betano* on 4 January. *Brunei*, *Tarakan* and *Wewak* arrived the following week on 13 January. The ships had brought with them some 3000 naval personnel.

The arrival of *Melbourne* precipitated the establishment of a Shore Command Headquarters (SCHQ) at Admiralty House to coordinate the working parties, which were tasked by the Emergency Services Organisation. Working parties were typically composed of 10 or 15 officers and sailors, depending upon the nature of the task.

With the arrival of the Task Group, the primary focus for CDT1 turned to the extraction of *Arrow* from Stokes Hill Wharf, a task achieved on 13 January after much work. Unfortunately *Arrow* was damaged beyond repair and was subsequently decommissioned and scrapped.

The raw statistics amply illustrate the magnitude of the relief work undertaken by the RAN. Between 1 and 30 January naval personnel spent 17,979 man days ashore, with up to 1200 ashore at the peak of the operation. Working parties cleared some 1593 blocks and cleaned up schools, government and commercial buildings and recreational facilities. They installed generators, rewired houses, repaired electrical and air-conditioning systems, re-roofed or weatherproofed buildings, and maintained and repaired vehicles. Some parties worked to save rare plants in the Botanical Gardens. Hygiene parties disposed of spoiled foodstuffs from houses, supermarkets and warehouses. Female personnel from *Coonawarra* supported civil relief organisations and manned communication centres. One enterprising sailor from *Hobart* filled in as a relief disc jockey for the local commercial radio station. The Wessex helicopters transported 7832 passengers, 244,518lbs (110,912kg) of freight and made 2505 landings. The HS748 aircraft completed 14 return flights to Darwin and carried 485 passengers and 50,000lbs (22,680kg) of freight.

Like its arrival, the departure of the Task Group was staggered. *Balikpapan* and *Flinders* departed early, on 7 and 9 January respectively; *Stuart*, towing *Attack* to Cairns, sailed in company

with *Brunei*, *Tarakan* and *Wewak* on 17 January; *Hobart*, *Melbourne* and CDT1 left on 18 January; *Betano* on 23 January; and *Supply* and *Vendetta* on 24 January. The SCHQ was closed down on 30 January and FOCAF transferred responsibility for the continuation of disaster relief to the Commandant of the Army's 7th Military District. The following day the last ships, *Brisbane* and *Stalwart*, sailed from Darwin.

The departure of the Task Group did not, however, signify the end of the RAN's support to the rehabilitation of Darwin. In May and June 1975 the minehunters HMAS *Curlew*, HMAS *Ibis* and HMAS *Snipe* surveyed the approaches to Darwin and the harbour itself, locating trawlers sunk during Cyclone Tracy, and other navigational hazards.

Cyclone Tracy was not the only disaster that befell Australia during the Christmas and New Year period of 1974-75. On the evening of 5 January 1975 the Australian National Line bulk carrier MV *Lake Illawarra*, laden with a cargo of zinc concentrate, collided with the Tasman Bridge, which spanned the Derwent River in Hobart. The ship sank, killing seven of the crew, and collapsing two pylons and 127 metres of bridge decking into water 110 feet deep. Four motor vehicles fell into the river, killing five occupants.

At 0430 on 6 January 1975, a 14-man detachment from Clearance Diving Team 2 (CDT2), commanded by Lieutenant Alexander Donald, DSC, RAN, flew to Hobart for search and recovery operations. Following preliminary dives on 6 January, CDT2 was tasked to locate and assist Hobart Water Police recover the motor vehicles. Two additional divers from CDT1 arrived from Sydney, with a one-person recompression chamber. Two vehicles were identified on 7 January; one was salvaged that day and the second three days later. Another vehicle was found buried under rubble on 8 January. Three team members assisted Tasmanian Police divers comprehensively survey the wreck of the *Lake Illawarra* between 9 and 13 January. Operations ceased on 16 January.

The Navy divers operated in hazardous conditions, with minimal visibility and strong river currents. Divers had to contend with bridge debris consisting of shattered concrete, reinforced steel rods, railings, pipes, lights, wire and power cables. Strong winds on the third day brought down debris from the bridge above, and caused unguarded 'live' power cables to fall into the water, endangering the divers. Understandably, Lieutenant Donald described the conditions as 'appalling'.



The breakage of an important arterial link isolated the residents in Hobart's eastern suburbs - the relatively short drive across the Tasman Bridge to the city suddenly became a 50 kilometre journey around the bay. Although ferries provided a service across the Derwent River, it was not until December 1975 that a single lane combat bridge was opened to traffic, thereby restoring some connectivity. Reconstruction of the Tasman Bridge commenced in October 1975 and the bridge officially reopened on 8 October 1977. The wreck of the Lake Illawarra remains where it sank in 1975.<sup>4</sup>

The reaction to Cyclone Tracy and the Tasman Bridge disasters demonstrated the RAN's ability to aid the civil community whenever directed by the Government, to deploy a multi-skilled and committed workforce at short notice, to accommodate that work force in self supporting assets, and to maintain that support without impacting on a disaster-affected community's limited resources. Moreover, a maritime response force can move large quantities of essential equipment and materials to a disaster affected area to assist in remediation and reconstruction. This is consistent with the RAN's doctrinal principles of readiness, reach, and mobility in mass.<sup>5</sup> Thirty years on, the RAN's warfighting resources and

core skills allow it to maintain the capabilities, skills and preparedness levels necessary to also respond to disasters resulting from natural and human initiated events, both within Australia and in the wider Asia-Pacific region.

### **Replenishment at sea - a significant force multiplier**

*(Issue 3, May 2004)*

One of the least glamorous aspects of maritime warfare involves the underway replenishment of warships at sea and the logistic support of forces deployed ashore. It is also one of the most important. Even a short conflict can rapidly use up missiles, ammunition, fuel and stores at a prodigious rate. This is where afloat support becomes so vital.

Replenishment at sea is a significant force multiplier that extends the range and sustainment of both surface combatants and amphibious vessels with land forces embarked. Afloat support ships provide greater reach and endurance and allow self-reliant and sustained operations to be conducted away from a shore support base. This is particularly important when friendly countries might be disinclined to offer port facilities or, for

force protection or political reasons, we would wish to reduce our footprint ashore. This afloat support capability, which enables warships to provide an ongoing presence and an immediate response to a developing situation, is vital for Australia, given our enduring geo-strategic circumstances and the fact that practically every conceivable operation must be conducted and sustained at considerable distances from Australian shore support.

For these reasons, and as noted in Australian Maritime Doctrine, a credible surface task group will always include an afloat support ship to provide logistic support. Without an afloat support ship to replenish fuel and other essential consumable stores ships are restricted to operating at distances no greater than their half-range from support. When constrained to this half-range, surface combatants are unable to conduct operations or remain on station for protracted periods before having to return for resupply. To achieve extended periods at sea, surface combatants must either have access to closer shore support or be accompanied by a replenishment ship. Given Australia's long coastlines, neighbouring archipelagic and island nations, sparse infrastructure, and minimal options for forward operating bases, afloat support empowers the Australian Defence Force (ADF) to conduct a range of independent operations that would otherwise not be possible. Even when shore support facilities or a forward operating base might be available within our region, their use would be subject to host nation agreement, which may well be denied in some circumstances. Furthermore, extended operations using surface combatants in areas where shore support is not available, such as the Heard and McDonald Islands fisheries zone, are not possible without a replenishment ship.

With suitable replenishment ships and the ability to resupply at sea, fighting units can remain on station for weeks at a time. As a general indication, a surface combatant supported by a replenishment ship is limited only by crew rest considerations. Replenishment ships are not, however, just tankers. They are a 'one-stop logistic shop' and must carry several different cargoes concurrently in order to provide the full range of afloat support to surface combatants and task groups in order to increase both their range and sustainability. This not only includes diesel fuel, aviation fuel, oil and lubricants, but also dry stores including food, refrigerated and frozen stores, general stores and spare parts, water, and ammunition. Furthermore, a balanced and efficient onboard storage capability provides

greater effectiveness, reducing the time required to replenish warships and increasing the time before the replenishment vessel itself must return to port to restock.

In addition to their primary role of supporting maritime task groups in both open water and littoral operations, replenishment ships are also critical joint logistic assets necessary to sustain forces operating throughout the littoral in operations ranging from humanitarian support to warfighting missions. The latter operations will depend on the ability of naval forces to contribute to the protection of the joint force, provide and safeguard sustainment from the sea and protect the logistic bridge from the home base across the open sea and through potentially hostile littoral waters. Afloat support for these operations includes supporting land forces, forward operating bases, and any forward land-based resupply points. This capability was convincingly demonstrated during operations in East Timor in 1999. With their ability to carry large amounts of stores and to operate helicopters, replenishment ships are also well suited to provide humanitarian aid.

Despite technological advances, replenishment at sea, whether ship-to-ship or by helicopter, remains a routine but potentially dangerous and personnel intensive evolution. This complex task is carried out by the replenishment ship and receiving warship steaming side-by-side in close proximity, linked by fuel hoses and wires rigged between the two vessels, whilst simultaneously transferring stores by helicopter. It demands great skill and the highest standards of seamanship, especially in rough weather and at night. However, the ultimate test in replenishment at sea, for both supplying ship and customer, is for a usually difficult exercise in peacetime to be carried out in time of tension or war, with ships faced with simultaneously carrying out replenishment while at a heightened state of readiness for action. In an Anzac class frigate for example, up to 20 of its complement of 165 are required as line-handlers at the receiving station to haul over the highline or spanwire and connect up to the replenishment at sea system. In addition, a significant number of people (up to 75% of the crew) are needed to close-up at various specialist stations and to manage and strike-down the ammunition and stores embarked, whether from another ship or by helicopter.

The Royal Australian Navy's current afloat support capability is provided by the underway replenishment ships HMAS *Success* and HMAS *Westralia*. The locally-built *Success*, which entered service in 1986, is a multi-purpose



replenishment ship (AOR), which effectively combines the functions of a fleet oiler and stores ship. This very versatile ship is equipped with a flight deck and helicopter hangar. *Success* is capable of simultaneously replenishing two ships, one on each side, and concurrently by the embarked helicopter to both the receiving ships and other ships in company. Four main replenishment at sea stations are fitted, two of which have dual functions and can be used to transfer either fuels or solids, including ammunition. The less capable auxiliary fleet oiler (AO) *Westralia* was designed and built as a commercial petroleum tanker and modified by the British Royal Fleet Auxiliary for underway replenishment in 1979. Originally leased by the RAN in 1989, *Westralia* was purchased outright in 1994. Although it can carry some food and stores, its principal cargo is diesel and aviation fuel to refuel warships at sea. *Westralia* has transfer points for fuel, water and stores and is capable of replenishing up to two ships at a time. Both ships saw active service in the Gulf War in 1991 as part of the Multi-National Naval Force conducting operations in support of Kuwait, and more recently also provided valuable logistic support to INTERFET operations in East Timor.

Although the acquisition of new surface combatants and amphibious ships is important, being able to support them as part of the RAN's capability to deploy locally, regionally and worldwide, is also of crucial importance. A key issue in determining the number and capabilities of future replenishment vessels, is the issue of concurrent operations, often in geographically dispersed locations. A replenishment vessel used to support the deployment, projection and sustainment of land forces would invariably be unavailable to replenish other, geographically dispersed vessels at sea. This is an important point because in addition to projecting and sustaining land forces, an operation in the littoral will often require surface combatants to conduct operations over a wide geographical area. These units will be required to undertake such diverse activities as shaping operations, patrolling choke points and escorting merchant vessels. In addition, surface combatants may also be required to concurrently conduct border protection operations, or even to participate in wider multinational and coalition operations in support of Australian national interests, all of which will also require replenishment at sea.

As part of the 2003 Defence Capability Review, the ageing and single-hulled *Westralia* will be replaced by a more modern, but similar, double-hulled commercial tanker. This will be

purchased in 2005 and converted locally to an auxiliary fleet oiler, entering service in 2006. It is, however, envisaged that *Success* will be replaced by a multi-purpose afloat support and sustainment capability next decade. In addition, it is expected that the major amphibious ships to be acquired will also be capable of providing limited afloat support to accompanying ships, in addition to their primary role of landing and supporting a force ashore.

Rather than landing all logistic support for land forces on arrival in theatre, it is expected that the ADF will embrace a joint 'seabasing' concept in the future, tailored to our specific requirements but on a more modest scale than that envisaged by the US. This would see the retention of material such as ammunition and fuel onboard ships until such time that it was required ashore. This would reduce the footprint ashore and as a result, the vulnerability of stores dumps ashore, reduce reliance on host-nation support, streamline logistics resupply and provide flexibility for rapid redeployment or manoeuvre operations in the littoral. Afloat support and amphibious ships, supported by strategic sealift capabilities, will have a key role to play in providing sea-based logistic support to forces deployed at sea and ashore in the littoral.

Given the realities of Australia's geostrategic situation and recent Government priorities, an afloat support capability is essential. This capability will provide flexible response options to ensure that surface combatants and joint task groups are able to successfully conduct operations from and at sea for the protection, projection and sustainment of ADF land and air elements, as well as for the conduct of broader maritime operations in support of Australia's national interests

### Why Australia needs a mine warfare capability

(Issue 7, July 2004)

Mining can occur in any level of conflict and the sea mine represents a viable threat to Australia and its interests that cannot be ignored. The ability to counter the potentially serious threat to national security and trade posed by covertly laid sea mines requires an effective and balanced Mine Warfare (MW) capability incorporating a combination of minehunting, minesweeping, clearance diving, and mining capabilities. MW forces need to be capable of deploying throughout Australia's area of strategic interest to conduct mine countermeasures operations in order to ensure the safe transit of naval units and commercial shipping through mine threat areas.

The Australian Defence Force (ADF) MW force must be able to conduct:

- mine surveillance and reconnaissance operations to establish the presence or absence of mines;
- timely clearance of ports, port approaches, off-shore resource installations, choke points and focal areas;
- hydrographic reconnaissance, survey and clearance of obstacles;
- protection of Sea Lines of Communication;
- explosive Ordnance Disposal (EOD), Improvised Explosive Device Disposal (IEDD), and demolition of ordnance and explosive devices; and
- offensive, defensive and protective mining.

The maritime mine is a cheap, effective weapon that can be used in a variety of ways to achieve different strategic or tactical objectives. Mines can be used in small numbers to sink ships, or in large numbers to blockade ports and deny sea areas to an adversary. They can be used at all levels of conflict, particularly in the early stages where political pressure can be exerted without fear of immediate higher level retaliation. They can be laid by aircraft, submarines and surface vessels, covertly and without advance warning. The low cost and highly effective nature of mines means that economically constrained countries or non-government groups may be able to employ a destructive capability out of all proportion to its cost. In the Australian geo-strategic environment, mines are a particularly effective method of interdicting sea communications in the archipelagic choke points of Southeast Asia.

The use of naval mines and the need for effective mine countermeasures (MCM) has been one of the most notable features of naval operations in the post World War II era. Since the Corfu Channel incident in 1946<sup>6</sup> the threat of naval mines has been a regular feature of international conflict and crisis. In recent decades the use of naval mines has increased, and their potential use by terrorist and criminal organisations has added another dimension to the threat. Incidents in the Arabian and Persian Gulfs since the 1980s have reinforced the need to be able to combat both low and high technology mines.

Early sea mines were relatively simple devices; however, modern mines are more technically advanced, versatile in their deployment and difficult to counter. Today, there are many types of mines available, each with their own delivery system and purpose. Mine actuation methods vary significantly, including the use of ships' magnetic, acoustic and pressure signatures,

as well as contact or remote control. Therefore, a combination of minehunting, minesweeping and clearance diving is required to allow for the efficient and effective location, identification and disposal of sea mines and underwater obstructions.

Minehunting is a highly specialised operation that requires purpose built vessels equipped with mine detection and disposal equipment. It is a complex task that involves a slow, methodical search of the seabed and water volume using high definition sonar projected ahead of the minehunting vessel to detect moored and ground mines.<sup>7</sup> Once an object has been located and classified as a possible mine, a Mine Disposal Vehicle or a clearance diver is dispatched to positively identify the contact and, if necessary, dispose of the mine. Minehunting is the preferred method in areas where the seabed and sonar conditions are good, where pressure mines are part of the threat, and where intelligence indicates that MCM vessels may be targeted. Its major advantages are the speed of clearance and the fact that the MCM vessel does not have to pass over the mine to detect it.

Minesweeping involves using mechanical sweeps, which physically remove a moored mine by cutting the mooring wire, or influence sweeps, which emulate the magnetic or acoustic signatures of a surface or sub-surface vessel and explode the mine. Minesweeping can be carried out by nonpurpose built vessels such as trawlers, and is the preferred method:

- against a known moored mine threat;
- when the percentage of undetectable mines is assessed as high;
- in areas where environmental conditions degrade sonar performance;
- to provide a level of protection to the higher value minehunter;
- in very shallow water; and
- to increase the overall probability of clearance in combination with minehunting.

Clearance divers are used to augment conventional forces in confined or shallow waters where MCM vessels cannot easily gain access. Clearance divers use a variety of techniques to survey, detect, classify and dispose of mines and underwater obstacles.

Generally, mine clearance operations would commence with exploratory operations by minehunters to determine the extent of the minefield and the general bottom condition. A decision is then made to either clear a channel or divert vessels around the danger. If the clearance option is selected, both minehunting and minesweeping are usually required to achieve an



acceptable level of safety to allow the transit of vessels through the area. In clearing a channel remote controlled drone boats would conduct precursor operations, using acoustic and magnetic influence sweeps, to provide a modicum of protection to the larger MCM vessels. The minesweepers would then conduct minesweeping operations with mechanical and influence sweeps configured to emulate the target vessels. Once the minesweepers have achieved a certain level of statistical clearance the minehunters would continue operations to raise the clearance to a level suitable for vessel transit.

When faced with a threat of maritime mining, the most effective MCM operation is to prevent mines being laid in the first place. At the beginning of the 2003 Iraq War a boarding party from HMAS *Kanimbla* intercepted two Iraqi minelaying tugs, which were carrying over 80 mines between them. Had these mines been laid as intended then a substantial mine clearance operation would have been required to allow the safe passage of ships.

Adoption of an effective mining capability by the ADF could facilitate our ability to achieve strategic control of Australia's maritime approaches, whilst at the same time denying an adversary freedom of action in this area. Mines can be particularly effective in constraining the actions of an adversary, as was demonstrated with the US mining of Haiphong harbour during the Vietnam War, and the Allied mine blockade of the Japanese homeland and occupied ports and harbours in World War II. The opposite side of this capability is being able to conduct effective clearance operations to remove offensive and defensive minefields on completion of a conflict. The World War I mine blockades in the English Channel, North Sea and the Heligoland Bight employed approximately 300,000 mines. Some 700,000 mines were laid in the Atlantic, Mediterranean and Pacific Oceans during World War II.<sup>8</sup> The Royal Australian Navy cleared mines from Australian and regional coastal areas continuously from 1945 until 1950.<sup>9</sup> The US Navy Task Force 78 took 132 days in 1973 to clear Haiphong, Hong Gai and Cam Pha harbours and their approaches of mines.<sup>10</sup>

Mines could be deployed in the approaches to an adversary's forward operating bases, and focal areas in the vicinity of the major archipelagic straits, to constrain or deter adversary initiatives in mounting operations against Australia. Similarly, protective minefields could be laid in the vicinity of Australian port approaches and major choke points to contain the threat posed by adversary surface and submarine forces, as was

done in World War II, thus freeing high value ADF assets to contribute to other national tasks.

In many respects MCM is approaching a watershed in its development. Australia seeks to exploit decisive manoeuvre operations and high technology to achieve short, sharp campaigns with minimal attrition to our limited resource and asset base. Our forces must be capable of operating effectively in the littoral and open ocean environments with limited constraint from adversary operations. Additionally, regional countries will look to MCM-capable forces such as the ADF for assistance if non-state groups, including terrorist and criminal organisations, lay mines in their national maritime areas and international straits. While the ADF's current MCM capability is good in regional terms, the changing nature of ADF operations and the evolving regional mine threat will require ongoing assessment to ensure the capability is maintained at an appropriate level to meet the Government's future strategic directives.

Developments in mine technology, especially stealth technology, will make future mine clearance operations increasingly hazardous for crewed MCM vessels. The ADF will need to transition to systems that enable remote detection and clearance, with a greater use of remotely operated or airborne vehicles for high-risk operations.

In the future, an MCM capability is envisaged as being incorporated into Major Fleet Units and submarines, providing an inherent MCM capability to deploying Task Groups for operations in the littoral. Future MCM operations will begin with clandestine advance force operations by clearance divers in conjunction with remote unmanned systems conducting rapid environmental assessment and MCM. This would be followed by the arrival of a Task Group with onboard MCM systems providing a capability to conduct rapid mine clearance to an objective area through previously explored areas. Current MCM systems may follow the deployed Task Group to provide area expansion and further risk reduction through longer endurance MCM operations.

A Mine Warfare Force is essential to meet the needs of decisive manoeuvre operations, as well as being able to perform operations needed to ensure the sea lanes are safe from hostile mining. This capability will help ensure the mobility of maritime forces and the maintenance of commerce and trade, which are so important to Australia's diplomatic, economic and social interests.



**60 years on: Leyte Gulf 1944***(Issue 11, October 2004)*

Following the initial Japanese advance in late 1941 and early 1942, and the halting of the offensive in the Solomons and New Guinea, the United States, supported by its allies, began its trans-Pacific assault. This campaign followed two lines of advance: the first, commanded by General Douglas MacArthur, along the northern coast of New Guinea, and the second, commanded by Admiral Chester Nimitz, through the island chains of the central Pacific. By 1944 these two lines began to converge on the 'Taiwan-Luzon-China' triangle. At a meeting on 26 July 1944 with his two theatre commanders, US President Roosevelt decided that the next objective would be the Philippine Islands.

Although the liberation of the Philippines is generally seen in a political context, it also offered important strategic implications. If the Japanese lost their hold in the Philippines, their Empire would be cut in two, and maintaining the flow of oil to the home islands would become even more difficult. The Allies would also gain another staging base for subsequent assaults on islands closer to Japan.

The retaking of the Philippines began with an assault on the Leyte Gulf-Surigao Strait area. Planning was complicated by the huge distances involved, for while the Normandy landings on 6 June 1944 were conducted 50 nautical miles across the English Channel, Leyte Gulf was more than 500 nautical miles from the main staging areas in Morotai and Palau. Much of the logistic support had to be sourced from the US west coast, more than 5000 nautical miles from the front. The assault would also take place beyond the range of land-based aircraft, hence all air support would need to come from US Navy aircraft carriers. The advance from Morotai to Leyte in one bound was a calculated risk, as the Allied forces would be ringed by Japanese airfields and land-based aircraft with greater staying power than the aircraft from USN aircraft carriers.<sup>11</sup>

Commanded by Vice Admiral Kinkaid, USN, the US Seventh Fleet and assigned elements of the US Third Fleet together formed Task Force 77 and the Central Philippines Attack Force, and comprised 157 combat ships (including 6 battleships, 11 cruisers and 18 escort carriers), 420 amphibious ships and 84 patrol, minesweeping and hydrographic vessels. Another 17 aircraft carriers, 6 battleships, 16 cruisers and 56 destroyers of the Third Fleet, under Admiral Halsey, USN, were tasked with covering the invasion. The Royal Australian Navy's

contribution to Kinkaid's force, under the command of Commodore Collins, consisted of the heavy cruisers *Australia* and *Shropshire*; the destroyers *Arunta* and *Warramunga*; the infantry landing ships *Westralia*, *Kanimbla* and *Manoora*; the frigate *Gascoyne*; and the motor launch HDML 1074. The RAN was also represented in Task Group 77.7, the Leyte Gulf Service Force of the Seventh Fleet, by the oiler *Bishopdale*, the provision ship *Merkur* and the ammunition ships *Poyang* and *Yunnan*.

Every shell, spare part, and morsel of food required for this vast armada had to be carried in ships from either the US west coast or Australia. Fuel and lubricants were sourced from the USA and the West Indies. Ammunition arrived from the USA via Australia. A third of all fresh produce came from the USA, the rest from Australia. This required a massive fleet train to carry the necessary supplies. Task Group 30.8 of the Third Fleet, which augmented the Seventh Fleet support force, comprised 34 oilers, 11 escort carriers, 19 destroyers and 26 destroyer escorts. Additional lift capacity, and an escort force, was required for supplies necessary to project and sustain the land operations.

On 10 October the assigned forces sailed from their assembly areas at Hollandia, Manus Island, Morotai and Guam. 'No one', wrote Captain Tarbuck, USN, the Senior Naval Adviser at MacArthur's headquarters, 'could see this great panorama of ships without realising the impotence of any great army engaged in oceanic warfare without control of the sea and air'.<sup>12</sup> The fleet arrived on 17 October and began bombarding Japanese shore positions and sweeping defensive minefields. On 18 October *Gascoyne* and the American minesweeper *YMS 393* entered San Pedro bay and laid channel markers and shoal water buoys.

On the morning of 20 October Task Group 78.3, which included *Westralia*, *Kanimbla* and *Manoora*, entered Leyte Gulf and commenced landing operations at Panaon Island. Within 45 minutes the three Australian ships had disembarked over 2800 troops of the US 21st Regimental Combat Team on the undefended island. The main landings at Tacloban and Dulag were accompanied by a full bombardment from battleships, cruisers, destroyers and rocket ships, including *Australia*, *Shropshire*, *Arunta* and *Warramunga*. By that afternoon the situation was secure enough for MacArthur to wade ashore and make his famous 'I have returned' broadcast. Shore based opposition to the landings was light and Japanese aircraft made only sporadic attacks during the day.

On the following morning, the two Australian cruisers were attacked by a lone Japanese dive-bomber, which crashed into the port side of *Australia*, killing 30 crew and wounding 64, many of them skilled and experienced bridge and gunnery control personnel. The Commanding Officer, Captain Dechaineux, was killed and Commodore Collins was wounded.<sup>13</sup> *Australia* was the first Allied vessel at Leyte hit by a suicide aircraft; although this was not part of the organised kamikaze attacks on the Allied forces, which began four days later, but the act of an individual pilot.<sup>14</sup> As a consequence of the casualties and damage *Australia*, escorted by *Warramunga*, sailed for Manus Island. These were the only Australian casualties of the operation.

The Japanese Navy activated its Operation SHO-1 defence plan as soon as the Allied assault forces were sighted on 17 October. The Japanese attack was scheduled for 25 October because of the time required to fuel the ships and embark aircraft. The Japanese naval forces, organised into Northern, Centre and Southern Forces, sailed on 22 October to intercept the Allied invasion force. The Japanese mustered one fleet aircraft carrier, 3 light aircraft carriers, 6 battleships, 2 hybrid battleship-carriers, 13 heavy cruisers, 6 light cruisers, and 31 destroyers. The Northern Force aircraft carriers were intended to distract and divert the American fast aircraft carrier group while the two Japanese battleship groups entered Leyte Gulf and attacked the invasion shipping. On paper this was a formidable force, however, there were a number of major weaknesses, primarily the lack of trained aircrews.

Three naval engagements were fought in the battle for Leyte Gulf on 24-25 October 1944. At the Battle of the Surigao Strait the Japanese Southern Force night attack on the landing forces was repulsed by Admiral Kinkaid's covering forces, including *Shropshire* and *Arunta*. Two Japanese battleships and three destroyers were sunk without loss to the Allied force, and a damaged heavy cruiser succumbed to air attack the following day.

Admiral Halsey ordered his ships to intercept the approaching Northern Force. In doing so he left the San Bernadino Strait unguarded, subsequently sparking a major controversy as to whether his main focus should have been to destroy the Japanese fleet or protect the landings. Thus, the US fleet carriers were successfully lured away from the entrances to Leyte Gulf, opening a path for the Japanese Centre Force.

At the Battle of Cape Engano the Northern Force lost four aircraft carriers, a light cruiser and

four destroyers, before the remaining force withdrew. At the Battle off Samar Island the Japanese Centre Force attacked the US Navy Escort Carrier Force, which was left exposed by Halsey's departure. This enemy force of powerful fast battleships and cruisers sank an escort carrier and two destroyers, but lost three heavy cruisers in return and withdrew without attacking the landing forces in Leyte Gulf. The failure of the Centre Force to press home its attack on the landing forces meant that the Japanese Northern Force aircraft carriers had been sacrificed in vain.

The Battle of Leyte Gulf cost the Imperial Japanese Navy heavily,<sup>15</sup> effectively destroying it as an offensive force. The potential naval threat to this and future Allied invasions was removed, and the need to provide extensive protection to logistics forces was also greatly reduced. The Japanese had failed to achieve their objectives whilst the Allies would ultimately achieve theirs. Several important lessons can be drawn from the Leyte Gulf operation.

A key principle of war is the selection and maintenance of the aim of an operation. The aim of SHO-1 was to disrupt the landings by attacking the transport shipping in Leyte Gulf. The Centre Force became distracted by its attack on the Escort Carrier Group, instead of carrying through the attack on the transport shipping. At the same time, the Allied force also failed to clearly select its aim. Halsey believed his primary role was destroying the Japanese fleet, while MacArthur believed Halsey's primary role was protecting the landings. This should have been clarified by higher command prior to the operation. Kinkaid's covering force was almost out of ammunition after the previous day's bombardments and the Surigao Strait night action. Had the Centre Force pressed home its attack the landing force could have suffered serious losses and the invasion might have been placed in jeopardy.

Another key principle of war is sustainment. As Leyte Gulf demonstrated, the difficulty of sustaining maritime power projection operations over extended distances should not be underestimated. The logistics effort was enormous, with extended and potentially vulnerable supply lines stretching over 5000 nautical miles. Of particular note is the substantial additional effort required to protect the ships of the logistic force, removing escort vessels and aircraft from offensive operations.

A third key principle of war is cooperation. Units of the RAN provided essential capabilities that complemented those of the US Navy at Leyte Gulf. Capabilities such as the infantry landing ships, logistics ships and survey ships were what



might now be termed 'niche' capabilities. The RAN's ability to operate in Allied coalitions and alliances, from 1901 to the current day, has been predicated on cooperation, in terms of shared or substantially similar doctrine, equipment and control arrangements.

The landings and naval battles at Leyte Gulf in October 1944 demonstrated the utility of maritime forces in power projection operations. Amphibious ships moved troops 500 nautical miles to landing beaches. Logistics ships moved vital stores, ammunition and rations, directly and indirectly, over 5000 nautical miles to maintain land and naval forces in the area of operations. Sea-based air power provided essential air cover to the fleet and land forces in an operation beyond the range of Allied land-based aircraft. In all but the latter, the RAN made a small, but still substantial, contribution to the successful outcome of the operation.

#### Naval operations other than war 1901-2004

(Issue 6, July 2004)

For over a century, since its inception in 1901 with the creation of the Commonwealth Naval Forces, the Australian Navy has performed many operations other than war. These operations fall into the diplomatic and constabulary categories of the Span of Maritime Operations outlined in Australian Maritime Doctrine. Diplomatic operations involve supporting Australian foreign policy, while constabulary operations involve enforcing the provisions of international and domestic law in Australia's maritime zones. The Royal Australian Navy (RAN) has regularly been involved in deployments in support of Australia's foreign policy, as well as exercises on both regional and international levels to show presence. The RAN has had an ongoing role in national surveillance, and has also provided military assistance to the national and international community in the form of hydrographic surveying and charting. It has provided assistance to overseas communities, as well as disaster relief, search and rescue, and the evacuation of Australian and approved foreign citizens from regional trouble spots. The RAN has also been involved in peace operations, environmental and resource protection, the prevention of illegal immigration, and drug interdiction. The following examples provide a brief overview demonstrating the diversity of operations that Australia's Navy has undertaken over the last century.

In November 1918 the cruiser HMAS *Encounter* delivered drugs, stores and a Medical

Relief Force to Fiji during the midst of the Spanish Influenza pandemic that killed over 25 million people worldwide. Despite a death rate of 10% amongst the native population, almost all of the crew volunteered to go ashore to assist, although these landing parties were not subsequently required.

During the Prince of Wales' visit to Australia in 1920 the battlecruiser HMAS *Australia* played a leading part in naval activities associated with the visit, including the RAN's first review in Port Phillip. During the interwar period, RAN ships regularly visited the New Guinea mandate, the Portuguese and Dutch territories, and the islands of the South Pacific to show the flag and maintain order. This included a request in 1927 by the British government for the light cruiser HMAS *Adelaide* to conduct a punitive expedition to put down a native uprising in the British Solomon Islands. The RAN also provided essential assistance to the Australian community, including bushfire and search and rescue assistance.

In the 1930s the economic situation worldwide worsened and naval activity in Australia was drastically reduced as funding was cut. Notwithstanding this, the RAN was still involved in a range of operations other than war. In 1934, the heavy cruiser HMAS *Australia* embarked the Duke and Duchess of Gloucester for a Royal Tour of New Zealand and the Pacific, with the heavy cruiser HMAS *Canberra* acting as an escort. The sloop HMAS *Moresby* provided assistance to Rabaul after a catastrophic volcanic eruption in 1937 that destroyed much of the city and killed over 500 people. There was also a visit to New York in 1939 by the light cruiser HMAS *Perth* to represent Australia at the World Fair, and to express gratitude for an earlier visit to Australia by ships of the United States Navy in connection with the NSW 150th anniversary celebrations.

In the years immediately after World War II the RAN conducted operations to prevent smuggling and illegal immigration in Japan, as well as operations to dump unwanted ammunition and explosives. The destroyer HMAS *Warramunga* visited Guadalcanal to exercise a steadying influence during a period of unrest. The RAN also intercepted Japanese fishing vessels operating without authority in the waters of the New Guinea mandate.

In 1951 HMAS *Bataan* was involved in preventing the Nationalist Chinese enforcing a blockade outside China's territorial waters, thereby illustrating the ability of warships to exercise a coercive diplomatic role. During this decade, the RAN conducted surveillance tasks around Australia, performed its first rescue



operation by helicopter, and conducted anti-smuggling patrols off North Borneo. The RAN surveyed shipping lanes, conducted a successful visit to Thailand, and the frigate HMAS *Queenborough* completed a global circumnavigation to show off Australia's technical capabilities after her conversion to an anti-submarine frigate. The Tank Landing Ship HMAS *Labuan* also carried an Australian National Antarctic Research Expedition (ANARE) party to Heard Island, to claim the territory for Australia.

In 1961 and 1962 RAN ships made goodwill visits to Saigon to demonstrate Australian support for the South Vietnamese regime, and surveyed shipping routes for ore carrying vessels in the Port Hedland area. Mid-decade, the destroyer HMAS *Anzac* represented Australia at the coronation of the King of Tonga. As part of Australia's diplomatic efforts the Navy assisted overseas communities, including conducting minesweeping operations off Bougainville and building a 210ft pier on Salakan Island in Borneo. As ever, the RAN was involved in search and rescue missions, including a high-speed dash from Melbourne to Macquarie Island to rescue a seriously ill member of ANARE. Assistance was provided after serious bushfires in Tasmania, and the first foreign vessel was arrested for illegally fishing in Australian waters. The RAN was also involved in a two-month operation shadowing a Russian trawling vessel in the Gulf of Carpentaria, as well as shadowing Soviet ships in the waters off Australia.

In the 1970s the RAN was involved in one of the biggest peacetime disaster relief operations conducted in Australia, Operation *Navy Help Darwin*, following the devastation of Darwin by Cyclone Tracy in December 1974. In January 1975 Navy clearance divers responded within seven hours to the Derwent Bridge disaster in Hobart. The Navy also provided disaster relief during the decade fighting bushfires around Sydney. This decade also saw a commemoration of Cook's landing, including 48 ships from ten nations. The guided missile destroyer HMAS *Hobart* completed the RAN's first global circumnavigation in 21 years. The Navy was also involved in patrol and surveillance duties in northern Australian waters, directed towards the protection of territorial waters and contiguous fishing and resource zones. Overseas, a RAN task group visited Osaka at a time when Japan was rapidly becoming Australia's major trading partner. RAN ships supported the protest against French nuclear tests in the Pacific, and RAN personnel provided assistance to the United

Nations Emergency Force in the Sinai. The RAN's exercise program provided a significant presence overseas, highlighted by the commencement of the RIMPAC series of exercises and of regular bilateral naval exercises with Indonesia. The RAN also provided assistance to Indonesia through the Defence Cooperation Program, and assistance to Papua New Guinea in the form of channel clearance and cyclone relief.

The 1980s were a period of high activity for the RAN. In 1981, the Navy conducted its first visit to China in 32 years. Also in 1981, as part of an Australian task force, the aircraft carrier HMAS *Melbourne* deployed on an extended cruise to show the flag in the Indian Ocean. Commencing in 1981 a major fleet unit was maintained in the North West Indian Ocean to observe Soviet ship movements during the Soviet invasion and occupation of Afghanistan. In December 1985 the destroyer tender HMAS *Stalwart* conducted a resupply run to the ANARE mission on Macquarie Island, when the regular Antarctic supply vessel *Nella Dan* was trapped in ice for six weeks. In response to the 1987 Defence White Paper, the RAN initiated a high profile presence in the South West Pacific region and rolling deployments to South East Asia. Importantly, the RAN was involved in a wide range of renovation and construction projects in local communities. Overseas deployments were conducted to demonstrate presence and military capability, thereby reinforcing Australia's foreign policy and strengthening defence relationships with countries in our area of primary strategic interest. The Pacific Patrol Boat project saw 22 vessels delivered to reinforce the capacity of 11 South West Pacific nations to protect their maritime resources. The RAN provided relief assistance after an earthquake in Bali, wharf construction and channel clearance in the Solomon Islands, and cyclone assistance to the Solomon Islands and Tonga. The Navy conducted patrols and provided helicopters in support of counter terrorist units for the protection of Bass Strait oil rigs. Operation *Morris Dance* saw ships placed on alert to provide evacuation of Australian and approved foreign nationals and intervention after the 1987 military coup in Fiji, repeated in 1988 during Operation *Sailcloth* for instability in Vanuatu. The RAN also contributed to Operation *Immune*, an ADF operation that provided essential transport during a domestic pilots' strike.

During the 1990s the RAN continued to undertake deployments to South East Asia and the South West Pacific as a commitment to presence in our region of interest. The commitment to

national surveillance remained, with many boardings and apprehensions of suspected illegal fishing and people smuggling vessels. The exercise program continued, with the RAN participating in ADF, regional and international exercises. During this period, the RAN was placed on alert to evacuate Australian and approved foreign nationals from Papua New Guinea. It also provided assistance in a range of peacekeeping and relief operations to Cambodia, Somalia, Indonesia, the Solomon Islands and East Timor. The RAN played an important role in the Maritime Interception Force in the Persian Gulf, enforcing United Nations sanctions against Iraq. The largest number of RAN survey vessels assembled since WWII took part in survey operations off Arnhem Land. In a change of pace, the RAN took part in Operation *Clamsaver*, transporting baby clams to alleviate overcrowding on the Great Barrier Reef. It was also involved in several high profile rescue operations in the Southern Ocean that attracted a large amount of media attention.

At the turn of the century, the RAN was undertaking many and varied activities spanning the globe. As well as conducting military campaigns, the RAN provided support to the Centenary of Federation Celebrations, the Olympic and Paralympic Games, the Commonwealth Heads of Government Meeting, the Rugby World Cup, and a visit by the President of the United States of America. The RAN also provided assistance to East Timor, the Solomon Islands and Bougainville, as well as continuing to participate in the Maritime Interception Force in the Persian Gulf. There were also some high profile chases, in conjunction with foreign navies and other Government agencies, to intercept vessels suspected of conducting illegal activities in Australian waters. The RAN provided disaster relief to overseas communities, as well as flood relief and bushfire relief in Australia. There were also ongoing sovereignty patrols in the Southern Ocean and surveillance operations to prevent the arrival of illegal immigrants.

Over the last century or so, the RAN has repeatedly demonstrated its capacity to undertake a diversity of operations other than war. It has been used diplomatically in both benign and coercive operations to support the Australian Government, as well as providing assistance and disaster relief to civil communities in Australia and overseas. The RAN has also played an increasingly important constabulary role, related to both international and domestic law, including supporting United Nations peace operations, enforcing sanctions, environmental and resource

protection, counter-drug operations, and preventing illegal immigration. These few examples demonstrate how significant the RAN's operations other than war have been over the last century, and suggest their continued relevance to Australia in the future.

<sup>1</sup> E Johnston, *Operation Navy Help: Disaster operations by the RAN post-Cyclone Tracy*, Northern Territory Library Service, Darwin, 1987, p. 2.

<sup>2</sup> G Odgers, A.G.P. Wright & M Austin, *The Defence Force in the Relief of Darwin after Cyclone Tracy*, Department of Defence, 1979.

<sup>3</sup> HMS *Odin* was attached to the Australian Submarine Squadron pending the delivery of the RAN's final Oberon Class submarines.

<sup>4</sup> Information on the Tasman Bridge disaster was drawn from the official report by the Commanding Officer of CDT2, Tasman Bridge Operations 6<sup>th</sup>-18th January 1975, February 1975.

<sup>5</sup> Royal Australian Navy, *Australian Maritime Doctrine*, Defence Publishing Service, Canberra, 2000, pp. 48-50.

<sup>6</sup> On 22 October 1946 the cruisers HMS *Mauritius* and HMS *Leander* and the destroyers HMS *Saumarez* and HMS *Volage* were exercising innocent passage through Albanian territorial waters via the North Corfu channel, a strait used for international navigation. Both destroyers hit mines, killing 45 sailors and injuring 42. The International Court later ordered Albania to pay Britain £843,947 in damages.

<sup>7</sup> Moored mines are suspended from the sea floor by cables or wires. Ground mines sit on the sea floor.

<sup>8</sup> E Fortin, 'Those Damn Mines', *United States Naval Institute Proceedings*, Vol. 118, No. 7, July 1992, p. 31.

<sup>9</sup> The South West Pacific clasp for the Australian Service Medal 1945- 1975 was issued for post-war minesweeping operations conducted in Australian and regional waters up to 16 August 1950.

<sup>10</sup> L.M. Hunt, 'Mines remain the weapons that wait', *United States Naval Institute Proceedings*, Vol.124, No. 5, May 1998, p. 50.

<sup>11</sup> Royal Navy, *Naval Staff History Second World War: War with Japan, Volume VI: The Advance to Japan*, British Admiralty, 1959.

<sup>12</sup> G.H. Gill, *Royal Australian Navy, 1942-45*, Australian War Memorial, Canberra, 1968, p. 501.

<sup>13</sup> The current RAN submarines HMAS *Collins* and HMAS *Dechaineaux* commemorate these officers.

<sup>14</sup> Gill, *Royal Australian Navy, 1942-45*, p. 511. He notes that instances of suicide attacks by damaged aircraft had been observed since 1942. The first organised kamikaze attacks occurred on 25 October 1944 in the attack on the US escort carriers *Santee* and *Suwannee*.

<sup>15</sup> Sunk: battleships *Musashi*, *Fuso*, *Yamashiro*; fleet aircraft carrier *Zuikaku*; light aircraft carriers *Zuiho*, *Chitose*, *Chiyoda*; heavy cruisers *Nachi*, *Atago*, *Maya*, *Chikuma*, *Chokai*, *Suzuya*, *Mogami*; light cruisers *Tama*, *Noshiro*, *Abukuma*; destroyers *Nowake*, *Hatsutsuki*, *Akitsuki*, *Yamagumo*, *Michishio*, *Asagumo*, *Hayashimo*, *Fusimami*, *Shiranuhi*. Damaged: battleships *Yamato*, *Ise*, *Hyuga*; heavy cruisers *Kumano*, *Takao*, *Myoko*; light cruiser *Yahagi*; destroyer *Kiyoshima*.



## BOOK REVIEWS

*Who's Who In Naval History: From 1550 to the present*

by Alastair Wilson and Joseph F Callo  
Routledge, Taylor and Francis Group, 2004.

This is a neat, roughly B5 size, hard cover book, within whose 356 pages resides a wealth of information on over 600 naval personalities, in the broadest sense, from the mid-16<sup>th</sup> century to the current date. The task of selecting a range of individuals who have been recognised for their impact on naval warfare and naval events through history is a daunting one, but on the whole the book reflects a sound choice of individuals both well-known and unknown to the reader of naval history.

The book ranges across the naval history of Europe, Australasia, Asia and the Americas, although the emphasis is very strongly on personalities in or affiliated with the Royal Navy and the United States Navy - hardly surprising given their size and influence at various times since 1550. There is an interesting blend of naval personnel, politicians, writers, and naval architects. While naval officers predominate, sailors of various navies are also represented. Writers include not only great strategists such as Mahan, Corbett and Richmond, but also novelists such as Monserrat, Forester and Clancy. As an example to our own Tom Frame on combining a naval and clerical career, one might point to Henri de Sourdis, who was both Archbishop of Bordeaux and admiral under Louis XIII. The reader will be culturally enlightened to learn that it was the son of Luc Casabianca, captain of Vice Admiral Bruey's flagship *L'Orient* at the Battle of the Nile in 1798, who perished with his father when the ship's magazine exploded, who was the model for Herman's poem that begins 'The boy stood on the burning deck...'

Australia is represented by both members of the RAN and RN and foreign officers who have made their mark in naval history or government. RAN members are somewhat sparse, being limited to Creswell, Collins, Darling, Goldsworthy, Taylor, Waller and Synnot. King, the first native-born Australian to reach flag rank, albeit in the RN, also rates a mention. Several notable RN officers with Australian connections, such as Dampier, Cook, Flinders, Bligh, Phillip, Crutchley, De Chair, Tryon and Fogarty-Fegen, are included, as are Europeans like La Perouse and von Müller of SMS *Emden* fame. However, perhaps the most unusual entry is Lieutenant

Edward Daniel, RN VC, court-martialled for drunkenness, who deserted after 'taking indecent liberties with four subordinate officers', who was stripped of his VC by royal warrant, and who, while living in Australia in 1863, volunteered for service as a soldier in New Zealand and died as a Lance Corporal in 1868 from a drink-related illness.

Of some concern is the fact that, despite having been reviewed by RAN officers, there were substantive errors in several entries. Fogarty-Fegen is described as being the Commanding Officer of RANC in 1926-28, when he was in fact the Executive Officer in 1928-29 - Captain Lane-Poole was the Commanding Officer from 1924-27 and Captain Forster from 1927-29. Synnot is cited as the Head of Defence Force Staff, rather than the correct title of Chief of Defence Force Staff. Under Creswell, the given composition of the RAN at the outbreak of WWI is incorrect - the small cruiser HMAS *Pioneer* and the submarines AE1 and AE2 have been omitted, while six destroyers are listed when only three were in service. This is despite the fact that *Pioneer* fired more rounds in anger than any other unit of the RAN in WWI, participating in the destruction of SMS *Königsberg* and the bombardment of Dar-es-Salaam. AE1, lost during operations against Rabaul in 1914, was the first British submarine loss of WWI. AE2 was the first Allied submarine to enter the Sea of Marmara during the 1915 Gallipoli campaign.

Omissions from Australia's naval record are also noticeable. Patey, who commanded the Australian squadron at the outbreak of WWI, who oversaw the capture of Western Samoa and Rabaul in late 1914, and who was later C-in-C of the North American and West Indies station, is unmentioned amongst the plethora of RN admirals. While Nasmith and Boyle, who commanded submarines that ran the Dardanelles in 1915 are listed, Holbrook, VC, whose fame led to Germantown in New South Wales being renamed Holbrook in 1915, receives only passing mention in Nasmith's entry, and Stoker, who commanded AE2 in the Dardanelles, receives no mention. Nor do Australian X-Craft commanders Hudspeth, DSC\*\* and Shean, DSO\* appear, although junior RN officers such as Price, DSC\*\* and Piper, DSO, DSC\*\* are included in the volume. While Goldsworthy is mentioned for his explosive ordnance disposal work, his compatriots Syme, Mould and Gosse are overlooked. Fogarty-Fegen of HMS *Jervis Bay* is noted for sacrificing



his ship against superior odds to save a convoy, but not Rankin of HMAS *Yarra* who made a similar sacrifice. No RAN sailor appears in the work, although there are a number of RN and USN sailors mentioned for bravery or devotion to duty, including one with a connection to Australia that is all but unknown - Seaman First Class Hutchins, who received a posthumous Congressional Medal of Honor for his actions at Lae, where, mortally wounded, he steered LST473 out of the path of two oncoming Japanese torpedoes, thereby saving the embarked men of the Australian 9<sup>th</sup> Division. Alas, Hutchins does not even rate a mention in the Australian Official History of the Lae operation. Names such as Sheean of HMAS *Armida* and Rogers of HMAS *Voyager*, however, are conspicuously absent.

Some entries contain wording that puts potentially misleading interpretations in the minds of readers. Benson, who was the US Chief of Naval Operations in WWI, is mentioned as playing a 'critical and politically complicated role in shaping US-British naval strategies'. This puts a surprisingly positive spin on the Anglophobic Benson who said in 1917 'we would as soon fight the British as the Germans', and whose inveterate hostility toward America's ally contributed unnecessarily to those complications. Likewise, Bligh's entry states that as Governor of New South Wales he 'proceeded to stir up discontent', which puts an undeservedly negative connotation on his attempt to follow his orders from London to end the corrupt practices of the NSW Corps, and of the venal John MacArthur, for which he was illegally removed from office at gunpoint and placed under house arrest for two years.

Some of the volume's conventions are a little perplexing; for instance the deliberate omission from the table of naval ranks of Midshipman, Sub Lieutenant and Lieutenant Commander, despite the fact that these ranks are used frequently throughout the entries in the book. Frustratingly, there is no index, making it impossible to find a particular ship or battle unless you know the name of a key figure who was involved and who has been included in the volume. In what appears to be an editorial oversight, the RAN and RCN abbreviations appear after 'RMS' in the abbreviations list. Also a little jarring was the somewhat patronising preface statement regarding 'the strings of letters which the British and other Commonwealth nations delight in adding to indicate honours and awards'. In a final minor criticism, the book lacks a single illustration, even within the expurgated table of naval ranks. Arguably, given the retail price, the work would have been enhanced by photographs or prints of

key historical figures.

Notwithstanding these deficiencies, Wilson and Callo have done a sterling job in bringing together an interesting compilation of personalities, many of whom have not previously received the limelight of public and professional attention. The book is soundly written, and is an excellent reference that deserves to be in the professional naval bookcase. Unfortunately, given its limitations, the retail price of £50 (around \$200 including postage from the UK) will prevent the book finding itself in the collection of many Australian naval officers and historians.

*Reviewed by Lieutenant Commander Glenn Kerr, RAN*

### **Is the JSF good enough?**

by Air Marshal Angus Houston  
Strategic Insights No. 9, Australian Strategic Policy Institute, Canberra, 2004

The Joint Strike Fighter (JSF) Project is arguably one of the most important defence programmes of the twenty-first century. A Paper written by the professional head of the RAAF explaining the reasons for his country's participation in the project has the potential, therefore, to give a fascinating insight into the reasons for the aircraft's procurement. Unfortunately, *Is the JSF good enough?* - Strategic Insights Number 9 disappoints at almost every level.

Despite the opening statement that '*the traditional image of dogfight battles in the air between opposing air forces is usually a most inefficient way of achieving air superiority*', the paper keeps returning, wistfully, to air combat manoeuvre and the realm of Within Visual Range (WVR) combat. No other methods of achieving air superiority are discussed or compared and the author admits that the F/A 22 will be '*the most outstanding fighter aircraft ever built*'. Surely this statement answers the initial question and poses a supplementary one - is the JSF adequate for a nation that might not be able to afford the F/A 22?

Insights No.9 lays stress on the fact that the JSF is designed from the outset as a multi-role aircraft capable of air combat, strike and electronic attack in the same sortie. It is a '*high performance stealth aircraft*' that clearly comes from the '*same stable as the F/A 22*'. These are vague statements that give the reader no real comparison between the types. What the author did not say was that the F/A 22 is built to provide a high degree of stealth in all sectors over a wide range of opposing radar wavelengths. In order to

reduce cost, the JSF stealth shaping has been optimised for the forward hemisphere and frequencies in the upper X Band. Even this more limited design may be further reduced in JSF airframes built for export. The F/A 22 is capable of 'supercruise' or sustained supersonic performance in dry thrust. This means that it can travel long distances at nearly twice the subsonic cruise speed of the JSF with less risk of detection. This is a feature that one would have thought the RAAF would regard as important. Add to it the fact that the APG 77 radar in the F/A 22 has about twice the area 'footprint' of the APG 81 in the JSF and it becomes evident that a single F/A 22 is more capable than two or more JSFs. This ought to have been taken into account when comparing costs.

Air Marshal Houston makes the valid point that initial deliveries of the F/A 22 will not be optimised for the strike role, despite the F/A designation. This is true, but the USAF has budgeted a series of incremental improvements and aircraft built from 2005 will be capable of carrying the GBU 32 Joint Direct Attack Munition (JDAM). From 2007 F/A 22s are programmed to be capable of carrying eight internal GBU 39B 'Small Diameter' bombs: the standard weapon load the JSF is expected to carry from 2014. Given the better performance of the F/A 22 this puts the JSF in context as the 'low' end of a high/low cost force mix. Significantly the Paper presumes Australian Information Technology superiority throughout the region through an unlimited time scale without justifying such an assumption. As with the lack of a threat appreciation this is a cause for concern.

One could fill several pages with comment on questionable assumptions but from a naval perspective the paper is remarkable for what it omits. There is one mention of air defence destroyers, one mention of the STOVL version of the JSF to be procured by the USMC and RN and surprisingly little comment (to a former RN AEW pilot) on the impact of Project *Wedgetail*. There is no mention at all of the stand-off air to surface missiles, to be used against ships, announced by Robert Hill on 26 August 2004. There is no mention of unmanned aerial vehicles in the combat, intelligence gathering or decoy roles. If they are not to play a significant role in the service life of the RAAF's next fighter, I would like to read why! Since the demise of the Skyhawk force embarked in HMAS *Melbourne*, the RAAF has been responsible for fixed wing air operations over the fleet. Given the area of ocean to be covered, this is an enormous and complicated area of responsibility, worthy one would have thought

of at least a paragraph's consideration. Any debate about variant selection is also conspicuously absent. The UK debated the choice between the F 35C 'tailhook' and F 35B STOVL versions for some years before deciding on the latter. The USN and USMC continue to debate their own 'mix' of these variants and the USAF has elected to buy a small number of F 35Cs to add to its large buy of F 35As. The F 35C has the greatest radius of action, the F 35A, with its smaller wing, the best 'turning' performance. The F 35B is limited in the number of weapons it can carry and has the smallest radius of action. Which would best suit Australia?

It may be, of course, that the author intended to 'damn' the JSF with the 'faint praise' of adequacy in order to stimulate interest in the F/A 22 *'the most outstanding fighter aircraft ever built'*. If this is the case, the paper still fails because it does not make the basic case for the capability against any sort of operational scenario. Nor does it link the capability to the rest of the ADF in the 'seamless, integrated manner' that was required in the 2000 Defence White Paper. A deeper and more incisive work is required to achieve that.

Like so many other papers written by Air Staffs, Insights Number 9 seems to fall into the trap of 'situating the appreciation'. The impression I took away from this document is (one might paraphrase) that *'the RAAF wants to operate jet fighters - the ones we have are getting old - so let us choose one that politicians will let us buy in significant numbers without controversy, and having chosen it let us write a role for it that it is capable of fulfilling.'* It does not explain, and I must read more widely to find out, what the threat is expected to be in 2014, how the ADF will counter it and what part a manned combat aircraft would play in doing so.

Paradoxically, I do recommend this paper to readers but as an example of a 'situated appreciation'. I hope that it will ring alarm bells that will encourage debate about Australia's future air combat requirements: *'our largest defence project ever'*. A project on such a large scale deserves more detailed analysis and Insights No.9 can only be considered an 'adequate' starting point from which to fill in the blanks.

*Reviewed by Commander David Hobbs, MBE RN (Retd)*

### ***D-Day: The Greatest Invasion - A People's History***

by Dan Van der Vat  
Allen & Unwin, 2003



Hardcover, 176 pp, illustrations, maps, index  
RRP: \$49.95

With 2004 being the sixtieth anniversary of the Normandy landings, it is timely that Dan Van Der Vat has provided readers with an often overlooked view of what was termed 'The Longest Day' with a new pictorial account entitled *D-Day: The Greatest Invasion - A People's History*. While many authors have provided detailed historical accounts and strategic analysis of the events that took place on June 6<sup>th</sup>, 1944, this account has focused closely upon the personal trials of and feats performed by a most extraordinary collection of people.

The events surrounding the Allied invasion of the Normandy area as the first act in breaching Hitler's 'Fortress Europa' are well known. Over 130,000 troops, 20,000 vehicles, 5,700 transports and warships with 8,000 aircraft launched the largest amphibious operation in history across the English Channel and opened the long awaited second western front against Germany. Five seaborne and three airborne divisions spearheaded the assault across an eighty kilometre front and in 24 hours of hard fighting secured the Allies their first foothold in North-West Europe. It was a day filled with drama, heroism and tragedy as the Allied armies began to embark on what General Dwight D. Eisenhower declared to be the 'Great Crusade' in Europe. Although the Allies had been fighting in the Mediterranean for over two years, and had been working their way through Sicily and Italy, it was the landings in France that would ultimately signal the return of freedom to Europe's shores. The events on the drop zones as U.S. and British airborne divisions clashed with the Germans in scattered gun battles and the climactic beach assaults along the five invasion routes of Utah, Omaha, Gold, Juno and Sword would become part of the legend of World War II.

This is very much a narrative history of the Normandy invasion, and Van der Vat allows the story to unfold through the words of the men and women who were involved. While some analysis has been provided, what really draws the reader to this book is the richness of the quotes and anecdotes that permeate the text and provide the numerous side-bars. We truly get the sense of drama and the momentousness that these events had for those who participated in them.

The book follows a logical sequence and begins with an analysis of the events leading up to the invasion and the way in which strategic imperatives influenced the evolution of the D-Day plans. The disastrous raid on the French port city of Dieppe in August of 1942 had a direct

influence upon amphibious development within the Allied camp and the time schedule for the invasion of Europe. The competing needs for landing craft in the Mediterranean and Pacific theatres imposed considerable delays and reassessments. The original three division plan was considered inadequate by the senior Allied leadership and was eventually revised into its historical format of five divisions in the surface assault supported by three airborne divisions. This first part of the book is written very much from the viewpoint of the strategists who designed the plan and organised the resources that executed it. It provides some interesting analysis of the difficulties in coalition planning and of the conflicting priorities of different services and national leaders.

The book moves on to examine the dilemma faced by the German commanders in defending the whole length of French coastline from Allied incursions, and the necessity they faced to pinpoint where the invasion of France would occur, as it inevitably must. This was made more difficult by the very active, and ultimately successful, deception campaign conducted by the Allies to make it appear as if the true intention was to land at the Pas de Calais further to the north.

The narrative gives a sense of anticipation as the invasion preparations move on to their momentous conclusion. Thousands of American, British and Canadian troops converge on the embarkation ports and begin to prepare for the big day. Along with descriptions of the training, the book provides an insight into how individuals dealt with the knowledge that they would soon be in the vanguard of the long awaited liberation of Europe, as well as into the thoughts of those who would be left behind. This incisive examination of how the man at the tip of the spear experienced war with all its boredom, excitement and tragedy is one of the strengths of the book. Whether it is the exploits of a British glider pilot, a radioman on a U.S. destroyer, French civilians awaiting their liberty, or the 1<sup>st</sup> Hussars' tank troop which alone of 3<sup>rd</sup> Canadian division achieved its D-Day objectives, all provide an intimate portrait of people living in extraordinary times. Each of the major conflict zones is examined in turn, from the night drops of the American and British paratroopers, to the five invasion beaches. The text quotes from official documents and unit histories and intersperses them with anecdotes and insights by those who fought there. The story does not end with the securing of the beachhead, but goes on to examine the tortuous effort to break out of the landing area and the hellish fighting in the



Normandy 'Bocage', the seemingly endless profusion of fortress-like hedgerows that aided the sustained defensive fight of the German Army. The view from the other side of the hill is also provided, and there is a particularly dramatic description of the last feats of arms carried out by German panzer ace Michael Wittman against the British before his ultimate demise at the hands of Canadian tankers.

*D-Day: The Greatest Invasion - A People's History* is replete with illustrations and provides black & white, colour and modern photographs that allow one to see not only the events and personalities described in the text, but also how some of the landscape has changed over the decades. There are also numerous photos of the participants as they appeared in their youth, when tyranny stood astride the continent of Europe and a generation of men and women united to undermine its foundations and bring about the collapse of Nazism. Dan Van Der Vat has added a unique and timely publication dealing with a well known event, but from a little known viewpoint. The participants spring up from the page as real people and they give a vitality and animation to the book not found in others volumes dealing with this subject. At a time when the number of D-Day

veterans is declining, this book comes at an opportune moment and reminds us that while great battles may alter the course of history, they must ultimately be fought by ordinary men.

*Reviewed by Major Arnaud Ng*

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