The Commonwealth Navies
100 Years of Cooperation

Edited by
Kathryn Young & Rhett Mitchell
Sea Power Centre - Australia

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2009 King-Hall Naval History Conference Proceedings

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The Sea Power Centre - Australia was established to undertake activities to promote the study, discussion and awareness of maritime issues and strategy within the Royal Australian Navy, the Department of Defence and civil communities at large. Its mission is:

- to promote understanding of sea power and its application to the security of Australia's national interests

- to manage the development of RAN doctrine and facilitate its incorporation into ADF joint doctrine

- to contribute to regional engagement

- contribute to the development of maritime strategic concepts and strategic and operational level doctrine, and facilitate informed forces structure decisions

- to preserve, develop, and promote Australian naval history.

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Notes on Contributors

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Rear Admiral Allan du Toit was raised and educated in Durban, South Africa. He entered the South African Navy in 1975 and served mainly at sea before transferring to the RAN in 1987. He has seen extensive service at sea, including command of HMAS *Tobruk* and as Commander, Coalition Task Force 158 in the Middle East. He has also served in a wide range of single-service and joint appointments ashore. Allan is both an accomplished naval historian and avid student of contemporary defence and naval affairs and has written two books on warships and naval history. He regularly contributes to professional naval conferences and journals in both Australia and overseas.

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An internationally known strategist and naval historian, Dr Friedman spent more than a decade at a major US think-tank, and another as consultant to the Secretary of the Navy. He has been concerned throughout his career with the way in which policy and technology intersect, in fields as disparate as national missile defence and mobilisation policy. He has consulted for the US Navy and the US Department of Defense and for major corporations. His more than 35 books include an award-winning account of US Cold War strategy and histories of British and Commonwealth cruisers and destroyers. He contributes a monthly column on world naval developments to *US Naval Institute Proceedings*, and writes articles for journals worldwide, and is responsible for a commercial database of world missiles. Dr Friedman holds a PhD from Columbia University, New York. He lectures widely on defence issues in forums such as the National Defence University, the Naval War College and the Royal United Services Institute. His current focus is on Network Centric Warfare; he recently published *Network-Centric Warfare: How Navies Learned to Fight Smarter in Three World Wars*. In 2011 he published a book on unmanned combat air vehicles.

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George Galdorisi is Director of the Decision Support Group at SPAWAR Systems Center Pacific where he helps direct the Center's efforts in strategic planning and corporate communications. Prior to joining SSC Pacific, he completed a 30-year career as a naval aviator, culminating in 14 years of consecutive experience as executive officer, commanding officer, commodore and chief of staff. George is a 1970 graduate of the United States Naval Academy and holds a Masters Degree in Oceanography from the Naval Postgraduate School and a Masters Degree in International Relations from the University of San Diego. He graduated from both the Naval War College's College of Command and Staff, and the College of Naval

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COMMANDER DAVID HOBBS, MBE, RN (RTD)

David Hobbs served in the Royal Navy from 1964 until 1997 and retired with the rank of Commander. He is qualified as both a fixed and rotary wing pilot and his log book contains 2300 hours with over 800 carrier landings, 150 of which were at night. David is a well known author and naval historian. He has written 11 books, the latest of which is *The British Pacific Fleet* and has co-authored nine more. He writes for several journals and magazines and in 2005 won the award for the Aerospace Journalist of the Year, Best Defence Submission, in Paris. He also won the essay prize awarded by the Navy League of Australia in 2008. He lectures on naval subjects worldwide and has been on radio and TV in several countries.

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Ian Pfennigwerth spent 35 years in the RAN in seagoing, staff and overseas postings, including command of the guided missile destroyer HMAS *Perth* and duty as the Defence Attaché in Beijing. After retiring to Port Stephens, NSW, he was awarded his PhD by the University of Newcastle in 2005. Ian has edited the Naval Historical Society of Australia's *Journal of Australian Naval History* for a number of years and is Visiting Fellow at the Australian Defence Force Academy in Canberra. He has written and published a series of books on Australian naval history, including *A Man of Intelligence* (2006), *The Australian Cruiser Perth* (2007), *Tiger Territory,* (2008), *Missing Pieces* (2009), *The RAN and MacArthur* (2009) and *In Good Hands* (2012).

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Joe Straczek joined the RAN as a junior recruit in January 1971. He was commissioned as a supply officer in February 1977 and served in a number of administrative positions ashore. Lieutenant Commander Straczek transferred to the RANR in 1991 to take up the position of Senior Naval Historical Officer. During his RAN service Joe became actively involved in naval history. As well as writing short articles for various magazines and journals he was associated in a volunteer capacity with the naval museums at NAS Nowra, HMAS *Nirimba* and HMAS *Cerebus*. Joe has served in various capacities on the committee of the Naval Historical Society of Australia as well as the Victorian and ACT Chapters of the Society. Upon his transfer to the RANR, Joe was appointed as the Senior Naval Historical Officer, a position he held for over 12 years. During this time he compiled *The Royal Australian Navy A-Z: Ships, Aircraft and Shore Establishments*. He also developed the Naval History Policy which amongst other initiatives eventually saw the establishment of the Naval Heritage Centre at Garden Island and the deployment of naval historians to operational areas. He also played a major part in rejuvenating the research collections of the Naval Historical Section. Joe holds a BA (Deakin), and a Master of Defence Studies and a PhD from University College at the Australian Defence Force Academy.

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Darren Sutton is the Head, Strategic Directions – Maritime Operations Division in the Defence Science and Technology Organisation. He was the Science and Technology Adviser to the Air Warfare Destroyer Project in the lead up to its Second Pass approval and before that the Navy Scientific Adviser. Dr Sutton has been involved in a variety of maritime research activities including experimentation, combat systems integration studies and weapon-target allocation research. He has also engaged in various technical cooperation programs and other international information exchange and collaboration activities, including as an exchange scientist at the US Navy Warfare Development Command. Dr Sutton has an undergraduate degree in science (physics and mathematics) with honours and a doctor of philosophy in science (laser diagnostics for hypersonic flows) from the Australian National University.

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André Wessels was born in Durban, South Africa. He received all his academic qualifications, including a D.Phil. (in 1986), from the University of the Free State, in Bloemfontein. After working as a teacher in Amanzimtoti and then as a researcher at the Human Sciences Research Council in Pretoria, he was appointed as a lecturer in History at the University of the Free State in 1988. At present he is a Senior Professor and Chairperson of the Department of History at the University of the Free State. He is the author of more than 50 articles in accredited journals, 70 other articles, 80 book reviews and 6 chapters in books. He is the author, co-author or editor of six books, and the author of four smaller monographs and four reports. His fields of interest and research include the history of the Anglo-Boer War, South African National Defence Force (especially the South African Navy) and aspects of cultural history. He has delivered more than 80 papers at conferences and other meetings in South Africa and abroad, and has been a guest lecturer at four overseas universities. His research has taken him to 10 foreign countries where he has conducted research at more than 50 archives, libraries and other institutions.

MR MICHAEL WYND

Michael Wynd is currently the Historian/Researcher at the Royal New Zealand Navy Museum located at HMNZS *Philomel* in Devonport, Auckland, New Zealand. He is also responsible for maintaining and developing the research library and archival collection. Michael's areas of research interest include warfare in the period 1850-1918 focusing on combined operations, colonial warfare, the 1st New Zealand Division, and technological developments and their impact on the battlefield. He has recently been working on a PhD on the New Zealand Division on the Western Front at the Centre for Defence Studies, Massey University.

Abbreviations

ACNB	Australian Commonwealth Naval Board
ADF	Australian Defence Force
ASUW	Anti-Surface Warfare
ASEAN	Association of Southeast Asian Nations
BPF	British Pacific Fleet
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CENTRIXS	Combined Enterprise Regional Information Exchange System
CIA	Central Intelligence Agency
CINC	Commander in Chief
CNS	Chief of Naval Staff
CSG	Carrier Strike Group
CTF	Combined Task Force
DNI	Director of Naval Intelligence
GRT	Gross Registered Tons
HF/DF	High-Frequency Direction-Finding
HMAS	His/Her Majesty's Australian Ship
HMCS	His/Her Majesty's Canadian Ship
HMNZS	His/Her Majesty's New Zealand Ship
HMS	His/Her Majesty's Ship
IJS	Imperial Japanese Ship
km	kilometres
lb	pounds
m	metres
mm	milimetres
MIF	Multinational Interception Force

NATO	North Atlantic Treaty Organisation
NAMRAD	Non-Atomic Military Research and Development
nm	nautical miles
psi	pound-force per square inch
RAAF	Royal Australian Air Force
RAN	Royal Australian Navy
RANR	RAN Reserve
RANVR	RAN Volunteer Reserve
RCN	Royal Canadian Navy
RCNVR	Royal Canadian Navy Volunteer Reserve
RFA	Royal Fleet Auxiliary
RN	Royal Navy
RNVR	Royal Navy Volunteer Reserve
RNZN	Royal New Zealand Navy
SAN	South African Navy
SIPRNET	Secret Internet Protocol Router Network
SWAPO	South West African People's Organisation
TF	Task Force
TTCP	The Technical Cooperation Program
UN	United Nations
US	United States
USN	US Navy
USS	United States Ship
W/T	Wireless Telegraphy
WWI	World War I
WWII	World War II

Acknowledgements

Foreword

This collection, from the sixth King-Hall naval history conference, addresses various aspects of Commonwealth naval cooperation during the 20th century. Since the end of the 19th century, Britain and her Dominions fought together to protect the Empire and its colonial interests. The concept of imperial naval defence, however, began in 1909 as a response to the Anglo-German naval arms race. Both Australia and New Zealand offered to fund dreadnoughts for the Royal Navy; Canada was also exploring options for collective security. With the encouragement of the British Admiralty, Australia decided to acquire a modern naval fleet that was capable of sailing the high seas. Its purpose was not only to protect local ports and shipping routes but to assist the Royal Navy to retain command of the sea. Over the next 100 years the various Commonwealth navies have routinely sailed together in both peace and war and with a remarkable degree of interoperability.

A century ago the Royal Navy faced its own problems in terms of global responsibilities and finite resources which was one reason why the Dominions were encouraged to acquire their own ocean-going fleets. These were to be forces capable of both protecting local interests and joining the great 'Sea League' of the Empire. Australia did not delay and within a remarkably short space of time had built a formidable naval force. The other Dominions followed according to their own priorities and the shifting demands of history. But in time they too became sea powers. Between them these navies built up an unsurpassed operational record, and in terms of interoperability the 'Commonwealth Navy' became the most successful international grouping of its type.

The first paper in this collection outlines the Fleet Unit concept, the model upon which the Dominion's built their navies. Although successful, the cloning was not without its share of challenges. The next six papers outline various Commonwealth naval developments in the period between World War I and the end of World War II. Two papers follow these that provide an extensive overview of naval and defence development in South Africa, including the Simonstown Agreement that enabled Britain to maintain a presence there until 1975. The next two papers discuss New Zealand's involvement in nuclear testing activities in the Asia-Pacific region and Canada's contribution to coalition operations in Southeast Asia. New Zealand initially helped the British conduct nuclear testing in the South Pacific region but a shift in domestic attitudes saw New Zealand change its posture and politically protest against French testing. With respect to Canada, not only has every Canadian warship now contributed to coalition operations in Southeast Asia but it was also a pioneer in undertaking network operations with US systems. The final three papers in this collection are more contemporary and cover the development of naval

doctrine, challenges of collective maritime defence, and the importance of maritime communication and interoperability in the 21st century.

Glancing back at a moment in time, over 100 years ago on 24 November 1909, the Honourable Joseph Cook, Minister for Defence, gave a speech in the House of Representatives in which he said,

> we must recognise both our Imperial and local responsibilities. The Empire floats upon its fleet. A strong fleet means a strong Empire, and therefore it is our duty to add to the fleet strength of the Empire. ... In passing the motion we shall enter what is called the great 'Sea League' of the Empire; and the wardenship of the Pacific will be allotted to us.

Today this sentiment still rings true; perhaps not in the form of the old Empire but instead under the new banner of the coalition. The world's navies continue to face many challenges. One of the most obvious is the need to work across the spectrum of operations, preventing disorder from taking root in an increasingly interconnected world. The source of this disorder could be piracy, terrorism, resource competition, or climate change; it might even be old fashioned state-on-state conflict. But whatever the cause, it is highly unlikely that it can be adequately countered by the efforts of any one agency. The integration of forces, in both a joint and a combined sense, will necessarily be the key. Even the United States, the largest naval power in the world, understands that it cannot do everything alone and is actively seeking partners to work together for common interests, especially in the area of maritime security. To work effectively with another force requires a long history of cooperation, and much day-to-day effort at the coalface. Indeed, in getting interoperability right, the human network can often be far more important than the technological.

There is much to learn from the history of Commonwealth naval cooperation, which was arguably the most successful international grouping of its type. It was the precursor for recent initiatives such as the US Navy's Global Maritime Partnership, but the required level of interoperability will not just happen on its own. These papers offer new insights into the changing nature of global connections, while highlighting the challenges inherent in modern attempts to produce a framework for enhanced maritime security cooperation.

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1 To Clone a Fighting Service: The Consequences of the Fleet Unit Concept

James Goldrick

Admiral of the Fleet Lord John Fisher, RN, has many monuments to his credit, but the one that is being commemorated in this paper requires the observer to look around more widely than any other. The Fleet Unit concept, as it was conceived and executed, provided the model for a progressive and successful cloning of naval services that has continued almost to this day. While the maritime areas of the globe are no longer divided up into the various Royal Navy (RN) Stations, the latter still has a worldwide legacy in the existence of no less than ten major navies (Australia, Bangladesh, Canada, India, Malaysia, New Zealand, Pakistan, Singapore, South Africa and Sri Lanka) and more than a dozen smaller services whose origins are directly or indirectly founded upon it. However, the nature of the cloning process had significant consequences, such as an over-reliance on Britain for naval infrastructure, the stunted development of independent military strategy, and the difficulty of developing an experienced officer corps. These issues were not well understood at the time and only became clear with the benefit of research and analysis.

The subject that has received the most attention, both from serious historians and from external observers, in terms of the relationship between the RN and the navies of the Commonwealth, has been the extent to which the RN's ethos was a false model for younger nations such as Australia and Canada with their more open cultures and less rigid class systems, and was it an equally false model for the navies of South and Southeast Asia, with their own very different cultural, religious and racial issues? This is a legitimate question but must be answered on several levels.

There is certainly evidence to indicate that some RN procedures and attitudes were inappropriate and occasionally destructive in their application, particularly in the very early years of newly established navies. Perhaps most important, the cloning in some ways hindered the national development of both the full understanding and the full local infrastructure of what was required to sustain a navy. I have elsewhere termed this the 'fleet, not a navy' syndrome in that the provision of so much external support by Britain, even if it was paid for, meant that the smaller nations did not have to invest in these areas to the degree which would have been otherwise required for the level of combat capability that they sought to sustain.[1] The symbiotic relationship, because it also helped the British in extending production lines and creating work for British industry, was so effective that it also served to delay the natural growth of the supporting infrastructure, both in government and industry, which the individual national navies required once the imperial bonds

were weakened. It is arguable that the history of the RAN, in the 100 years since, has been one of trying to evolve into the full identity and the complete form of a national navy. To a greater or lesser extent, achieving that evolution has been the challenge for all the navies of the Commonwealth.

The absence of local infrastructure also meant an absence of understanding in governments, industries and electorates of the totality of naval needs. It may also have inhibited the development of national consciousness in naval matters, particularly in relation to military strategy, by creating a perception that naval, or even maritime, was also inherently British and imperialist and therefore suspect to emergent nationalism. But it should be added that the absence of naval understanding was not simply a matter of local governments believing that their professional advisers were uncritical mouthpieces of the Admiralty in Whitehall. The syndrome also manifested itself in a failure to examine strategic questions from first principles because it was sometimes more convenient, probably because it was cheaper, to accept a British lead and the British line. The Australian Chief of Naval Staff in the mid-1930s found that his minister and the principal departmental adviser themselves looked to and opted for the Admiralty policy when that differed from that of the local naval staff, creating significant difficulties for the RAN.[2]

Nevertheless, for many years the parent-child navy relationship was a good bargain, manifested most obviously in Australia not only in the original Fleet Unit, but in the efforts to establish a Fleet Air Arm in the late 1940s and a submarine force in the early 1960s. Canada and India in particular had similar experiences with some of their force elements. Capabilities of these types could not have been developed within the same timeframe or within the same budgets if they had not had the direct support of the British. In other words, the smaller Commonwealth navies for many years were able to deploy much more combat capability, much more quickly and at much higher levels of efficiency than would otherwise have been possible for countries of their size. There was also a certain element of sheer good will involved. When seeking to receive the best possible refit in a British royal dockyard of their cut-price second hand cruiser in the late 1950s, it was no coincidence that the Pakistan Navy should dispatch a former *Aide de Camp* of Lord Louis Mountbatten, who was then the First Sea Lord, to be the commissioning commanding officer. It is no coincidence that the newly renamed PNS *Babur* should emerge in much better order than the original budget might otherwise have allowed.[3]

Some other consequences of the 'cloning' of the Dominion navies, however well meant they might have been professionally, were less than desirable. What has yet to be resolved, however, is the extent to which the naval cultures which were created within each country appeared to be alien because they were *British* in origin, or whether that alienation was the result of being *naval* in countries which did not have an inherently maritime outlook. For example, reliance upon RN training systems and immersion in their operations opened the professional and personal horizons of the young officers in many ways. Yet, inevitably, their 'world's best

practice' professional standards in mariner and warrior skills were developed at least partially at the expense of their connections with their own countries as the officers of the young navies were taken away from their homelands, and their home waters, for many years.[4]

The difficulty was that the perception of an impressed British identity meant that the attitudes and values held by the officers of the new navies were sometimes mistaken by external observers, some of whom should have known better, as being the values of Britain and the old world, rather than – as they often were – values that were intrinsically naval.[5] This should not have been surprising, particularly as some of the young officers concerned failed to make the distinction themselves and were occasionally 'captured' by the ethos of Britain to a degree that made it difficult for them to operate comfortably in their national environments, but it also tended to make it very difficult for them to argue a naval case amongst national defence policymakers. This was particularly so when they were arguing the importance of national interests as opposed to rigid concepts of territorial defence.

Canadian, Australian and the other Commonwealth naval personnel, even such 'anglicised' officers, were always readily and immediately identifiable to the British navy as being representatives of their nations. This was equally the case from the outset with the ships of the navies concerned, however substantial the proportion of British or ex-British personnel in their crews. Indeed, in an era in which mass emigration was taking place from the United Kingdom to the Dominions, it was hardly surprising that the 'new chums' from Britain should quickly and consciously identify with their chosen service and nation. The commissioning of the battle cruiser HMAS *Australia* in 1913 was informally concluded with a junior rating calling (successfully) for 'Three cheers for Wallaby land'.[6] Such conscious efforts at asserting national identity were sustained throughout World War I (WWI). The official historian described the deployed Australian units under RN control as 'primarily Australian and persistently Australian'.[7] This continued afterwards, sometimes to the point of breaching accepted protocols, as in the case of the Canadian Captain Victor Brodeur's 1936 insistence on flying the pendant of senior national officer present afloat, as the senior Royal Canadian Navy (RCN) officer, in the presence of the British Commander in Chief North America and West Indies Station.[8]

It is thus not surprising that more recent and sophisticated assessments of the problems encountered by the various services, during their periods of adolescence, should suggest that there were other causes to those difficulties that imposed social structures and outlooks alone. A recent review of the 1949 'mutinies' in the Canadian navy has pointed to the relatively small number of 'RN grown' personnel involved and shown that earlier assessments placed excessive emphasis on the RN-RCN linkages at the expense of issues related directly to the Canadian situation.[9] The fact is that a comprehensive analysis of this aspect must be integrated with surveys of social change and development outside the navies and the military if it is to be placed properly into the context of what were profound alterations of the social

systems of entire nations.[10] One acute observer of the Australian scene in 1938 noted that 'everybody' talked 'of home', even if they had never seen the United Kingdom themselves.[11] The men of the Commonwealth navies were not always alone in their attitudes towards the mother country.

The real drawbacks in the arrangement were more complex. This can be illustrated by the problems of officer development. In strictly professional terms, the repeated exposure to and judgement by British naval standards was largely beneficial. The RAN in particular adhered for many years to the policy that an officer would not be promoted unless he had served in the RN in his current rank, been matched against his British contemporaries and recommended for promotion according to RN standards.[12] Given the mutually destructive disputes amongst senior officers that occurred in both the Australian air force and army in the 1930s and 1940s, the RAN's avoidance of them at this time must have some connection with this ability to judge and promote to external standards. It is notable, as demonstrated by recent research, that the RCN suffered greatly from the individual rivalries of Canadian flag officers during World War II, a time when the Canadians were only advancing their own, despite the tiny size of the promotion pool, to meet the nationalist dictates of the Mackenzie King government.[13] It is also notable that such jealousies and personal rivalries emerged in the RAN in the 1950s, again in a situation when the navy was required to look to its own, all too small cadre of senior officers, for its leadership.[14]

Nevertheless, the real issue was that the RN career profile became increasingly difficult to impose upon the smaller navies as officers became more senior. The latter navies did not have the range and steady progression of senior appointments, particularly at flag rank, to 'grow' the officers needed to lead their service. Officers could find themselves serving as Deputy Chief of Naval Staff or Chief of Naval Personnel in the rank of captain. Their British equivalents would be vice admirals or even admirals with at least ten years more service to their credit. The RN, although it did its best, had only a limited ability to share senior appointments with the Dominions to assist in the development of those headed for the top.

The fact remained, and it was not properly addressed until many years later, that the smaller navies required their officers to diversify their professional skill base into policy and administrative matters rather earlier than the RN. Captain (later Admiral Sir) Herbert Richmond summed up the challenge in 1918 when he wrote of the Canadian situation:

> It is hardly fair to expect officers untrained in Staff work and possibly ... with a very limited experience of administration outside of ship-work to compete with the political and other difficulties extant ... it would require an officer of the very greatest ability to occupy the post of Director of the Naval Service and he would have to be

supported by a Staff of highly trained officers competent to represent their requirements unequivocally and to realise to the full what these requirements were.[15]

The question would be the extent to which those services might have to accept, or at least risk, a reduction in seagoing and war fighting skills to achieve such earlier diversification. Moreover, when a national candidate was required, the lack of alternatives could sometimes mean that officers were too long in the top job. Vice Admiral Percy Nelles of Canada clearly was, at exactly a decade, before his firing from the post of Chief of Naval Staff in 1944.[16] John Collins certainly felt that seven years (1948-55) at the head of the RAN was more than enough for himself and, for the South African Navy, however talented the officer, there must have been some drawbacks in the 20-year tenure of Admiral Biermann (1952-72).

There was another problem, even more difficult to quantify, within the original model for naval development, whereby the British provided senior officers to lead the new services. These officers as often as not, arrived with an aura of prestige and authority that allowed them to interact more effectively with local political establishments than many nationals. The three successive British chiefs of naval staff in Australia between 1937 and 1948 all seem to have been successful in this way.[17] One squadron commander of the 1930s, Rear Admiral Edward Evans, RN, capitalised on his own Antarctic and WWI heroics to become nothing short of a national celebrity, doing much for the RAN's image in the process at the otherwise very difficult time of the Great Depression. However, apart from the challenges these officers faced in adapting to local conditions and the steep learning curves often involved, their expertise and their prestige was largely lost to the navy they had led when they completed their postings. For most of the last century, there were few naval grey eminences within the retired communities of the Dominions and thus less chance of informed and responsible public comment on naval matters. By comparison, national armies possessed substantial reservoirs of potential support amongst community leaderships after both world wars. The relative scale of naval and military endeavours made this issue inevitable, but not to the degree that ensued.

The relationship between the RN and its new foundations could not have been and never was wholly one sided. We do not understand the extent to which the Commonwealth navies influenced the British navy, but they must have done so to some degree. There was always a certain reluctance in Britain to recognise the value of novelties which were 'not invented here' and to admit their origin. A few years after the RN finally adopted the rank of substantive commodore and 30 years after the RAN did so, it is interesting to recall the snippiness with which the RCN was viewed when it took that step in the 1950s. Moreover, the truth is that many developments in which the smaller navies led the British navy were actually drawn from the US Navy. The British Pacific Fleet's rude awakening to so many American superiorities in 1944-45 had already been experienced by the Australian Squadron in 1942-43 and by the Canadians from earlier in the war. Indeed, the fact that several

of the Commonwealth navies exploited American technology so successfully, while retaining the fundamental organisation, doctrine and training of the RN must have helped the latter develop a more critical attitude to its own equipment. That this was needed, at least to some extent, is best demonstrated by the scathing comment made by the then Flag Officer Second in Command Far East Fleet in 1966 to the captain of the first American built guided missile destroyer in the RAN that he 'could not understand why they had bought that American rubbish.'[18] That purchase was not a decision that Australia ever regretted, nor was the later buy of the *Oliver Hazard Perry* class guided missile frigates.

It may also be that the constant Commonwealth presence in British ships at sea played its part in evolving social attitudes and breaking down the too rigid class structures of the British service, adding their mite to the many other factors acting on this problem. A future RAN Chief of Naval Staff had the experience of being told in 1938, on completing his exchange appointment as a lieutenant commander in a British heavy cruiser, that he was 'too familiar with the sailors'. His comment was:

> Perhaps I should have mended my ways, but I had no intention of doing that. In my view, the ship would have been more efficient if officers and ratings had been in closer touch.[19]

The Commonwealth presence post-1945 may have also helped break down racial prejudices in all the navies. In particular, the shared training programs of junior officers from all over the world under RN tutelage from the 1940s onward helped greatly with what one veteran has described as their 'cultural evolution'.[20] The ease with which integration of the young officers was achieved in the cabin flats of the naval college and the mess decks and gunrooms of the training ships must stand as a tribute to the RN of the era.

Overall, the jury is still out and historians have much more to do. Yet any survey of the last hundred years, particularly one conducted with an eye to the experience of the navies of other nations not in the British Commonwealth, must lead one to the conclusion that the creation of the various national navies has been extraordinarily successful. The efforts of a century have resulted in not only the formation of a dozen substantial navies and more than a score of smaller services, but also a remarkable degree of shared professionalism, manifested in doctrine and procedures. The Canadian Rear Admiral Fred Crickard has described this as 'a transnational *operational ethic* transcending national norms.'[21] Those efforts have also produced a similarity of outlook in how navies should be employed that has at least partially succeeded in transcending cultural and racial barriers and which has survived into the 21st century. They certainly resulted, as demonstrated in both World Wars and many other conflicts, in producing navies that were much more effective in military terms than such small services have had any right to be.

Some of the side effects of these relationships, both good and bad, remain significant, if little understood, factors in the development of naval capability and of maritime strategy in many countries of the Commonwealth. They still need to be considered and understood, just as the RN still has its own thinking to do and adjustments to make in both its structure and its identity. The challenge for the future for all the Commonwealth navies will be to ensure that what is relevant and best in the legacy of Fisher and the 1909 Imperial Conference is retained without compromising national requirements.

Thus, more than a century after the introduction of the Fleet Unit concept it is still the basis of many navies worldwide. The opportunity for Commonwealth navy personnel to operate with the RN provided them with exposure to one of the most professional navies in the world, a professionalism they brought back to their home navies. Further, their 'colonial' perspective and attitudes helped to break down the cultural dispositions and rigid class structure of the British navy. Despite the setbacks incurred, the concept facilitated interaction between navies, and created numerous highly qualified naval organisations with diplomatic links between them which continue to influence the way they operate today.

Notes

1. James Goldrick, 'A Fleet Not a Navy: Some Thoughts on the Themes', in David Stevens & John Reeve (eds), *Southern Trident: Strategy, History and the Rise of Australian Naval Power*, Allen & Unwin, Sydney, 2001, p. 292.

2. James Goldrick, 'The Naval Professional: Admiral Sir Francis Hyde KCB, CVO, CBE, RAN', in David Stevens & John Reeve (eds), *The Navy and the Nation: The Influence of the Navy on Modern Australia*, Allen & Unwin, Sydney, 2005, pp. 344-346.

3. Letter, Admiral the Earl Mountbatten to Rear Admiral MS Choudri, 2 January 1957, Mountbatten Papers. See James Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996*, Lancer, New Delhi, 1997, pp. 54-56.

4. See a Canadian analysis of this question by Robert Glover, 'The RCN: Royal Colonial or Royal Canadian Navy', in Michael L Hadley, Rob Huebert and Fred W Crickard (eds), *A Nation's Navy: In Quest of Canadian Naval Identity*, McGill-Queen's University Press, Montreal and Kingston, 1996, pp. 71-90.

5. See, for example, TB Millar, *Australia's Defence*, Melbourne University Press, Melbourne, 1965, p. 168.

6. Kathryn Spurling, 'A Strategy for the Lower Deck of the Royal Australian Navy', in Stevens & Reeve, *Southern Trident*, p. 274.

7. AW Jose, *The Royal Australian Navy 1914-1918, Volume IX, The Official History of Australia in the War of 1914-1918*, Angus & Robertson, Sydney, 1928, p. 335.

8. David Zimmerman, 'The Social Background of the Wartime Navy: Some Statistical Data', in Hadley, Huebert & Crickard, *A Nation's Navy: In Quest of Canadian Naval Identity*, p. 257.

9. Richard H Gimblett, 'The Post-War "Incidents" in the Royal Canadian Navy 1949', in Christopher M Bell & Bruce A Elleman (eds), *Naval Mutinies of the Twentieth Century: An International Perspective*, Frank Cass Publishers, London, 2003, pp. 258-259.

10. Some of these issues are raised in 'Roundtable: Reviews of Christopher McKee *Sober Men and True: Sailor Lives in the Royal Navy, 1900-1945* with a Response by Christopher McKee', *International Journal of Maritime History*, vol. XV, no. 1, pp. 177-228.

11. Arnold L Haskell, *Waltzing Matilda: A Background to Australia*, Adam & Charles Black, London, 1942, p. 68.

12. Goldrick, 'The Naval Professional', p. 336.

13. Richard O Mayne, *Betrayed: Scandal, Politics and Canadian Naval Leadership*, University of British Columbia Press, Vancouver, 2006.

14. As an example, the outgoing Chief of Naval Staff Vice Admiral Sir Roy Dowling disliked Rear Admiral Harries and was unwilling to put him to Cabinet as a candidate for his successor as Chief of Naval Staff, opting only for then Rear Admiral Burrell. Only after pressure was put on him by his Minister once soundings had been taken informally within the navy as to the merits of both candidates was Harries' name also included. In the event, Burrell was selected due to the intervention of Richard Casey who had been unimpressed by Harries' diplomatic skills in Washington during World War II. Source: Conversations 1993-94 with the Honourable Fred Osborne, the then Minister for Air and the 'sounding taker' as a navy veteran on behalf of his colleague the Minister for the Navy.

15. Michael L Hadley & Roger Sarty, *Tin-Pots and Pirate Ships*, McGill-Queen's University Press, Quebec, 1991, pp. 296-297.

16. Marc Milner, *North Atlantic Run: The Royal Canadian Navy and the Battle for the Convoys*, Naval Institute Press, Annapolis, 1984, pp. 6-7 and 264.

17. Ragnar Colvin, *Memoirs*, Wintershill Publications, Durley, 1992, pp. 118-121.

18. Guy Griffiths, 'DDGs in Vietnam: HMAS HOBART: 7 March – 27 September 1967', in TR Frame, JVP Goldrick & PD Jones (eds), *Reflections on the RAN*, Kangaroo Press, Kenthurst, 1991, p. 331.

19. Henry Burrell, *Mermaids do Exist*, Macmillan, Melbourne, 1986, p. 65.

20. Michael White (ed), *We were Cadet Midshipmen: RANC Entrants 50 Years On*, Grinkle Press, Queanbeyan, 2006, p. 98.

21. FW Crickard, 'Alliance Navies and National Interests: The RAN and the RCN', in Greg Cox (ed), *Issues in Maritime Strategy: Presentations of the Royal Australian Navy Maritime Studies Program – 1994*, Royal Australian Navy, Canberra, 1994, p. 132.

2 The RAN/RN Cruiser Exchange 1924-36

David Stevens

Today, when we are used to seeing Australian ships operating all over the world, it is perhaps hard to appreciate that between the world wars the RAN was generally tied to cruising in local waters. A conservative political outlook combined with a lack of ships and funding, meant that other than the occasional foray into the South Pacific, the Australian Squadron usually confined its exercises to Queensland waters during the colder months and southern waters during the summer.[1] It was a program that ensured naval officers and sailors were seen at the Hobart Regatta, the Melbourne Cup and the Brisbane Agricultural Show, but one that did little to encourage recruitment, training or retention. As the Committee of Imperial Defence warned in 1923:

> A small local Navy with no scope for ambition and no variety of scene, cannot in the long run, secure the right type of Officers or men, or maintain a high standard of efficiency.[2]

And small the Australian Navy was, as Figure 2.1 illustrates.
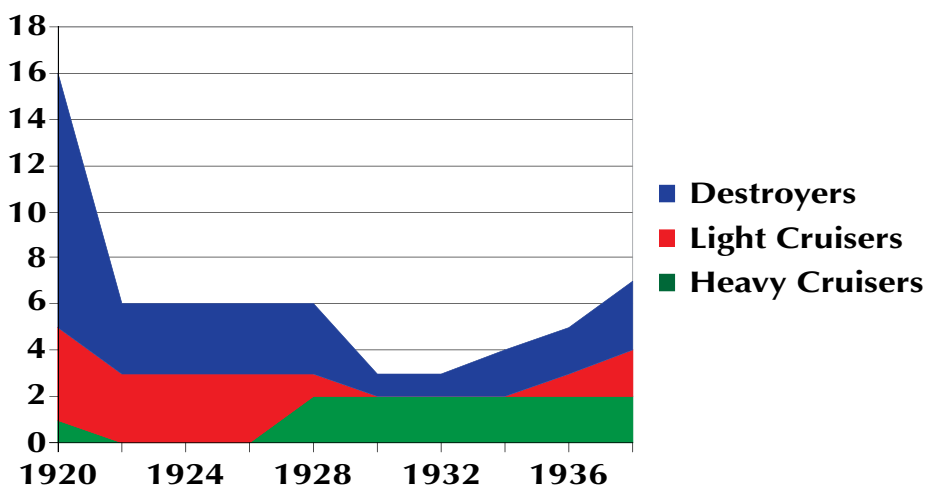
Figure 2.1: RAN Combatant Strength 1920-38

The risks posed by this unsatisfactory situation extended well beyond the issue of local maritime security. Although the Australian Government maintained the final say on its employment, it was generally accepted that in time of emergency the navy needed to dovetail into any imperial formation with which it might be required to cooperate. At the 1921 Imperial Conference, First Sea Lord Sir David Beatty had

stressed that the various navies of the Empire must be similarly trained, adhere to a common doctrine and use a common system of command. Indeed, with Dominion cruisers expected to play an important role in British offensive operations against the Japanese and the protection of imperial convoys, it made perfect sense that Australian ships and personnel should be wholly interchangeable with the ships and personnel of the Royal Navy (RN). Uniformity reached out to the furthest corners of the Australian service, extending from the specifications of the grey paint used on ships through to the design of uniform and badges, where only the buttons were allowed to differ.[3]

The idea that Dominion and Imperial navies were just separate parts of a whole was not new. Between Australia and Britain, agreement to the full interchange of personnel had been reached as early as 1908, and the close connection had certainly proven extremely successful during World War I.[5] But in the immediate post war years Australia's naval investment sharply declined making it increasingly difficult for the RAN to maintain a credible contribution to Empire Defence. Commenting of the 1920-21 naval estimates, the Australian Commonwealth Naval Board (ACNB) declared that the

> Naval Defence as outlined in this statement cannot be regarded in any way as adequate for the defence of the country, and for this we must rely on the British navy … what is being done is to endeavour, with the funds available, to keep the sea-spirit of Australia alive, and to provide for a nucleus of a fleet on a local defence basis, which can be expanded when circumstances permit.[6]

In the ACNB's opinion the best result would be achieved by maintaining the RAN's cruiser fleet, and it assessed that three cruisers was the minimum with which exercises and general training could be efficiently conducted. The Admiralty, keen to secure the greatest possible Dominion support for collective naval defence remained extremely supportive, offering loan personnel and training in the United Kingdom for executive officers and specific ratings, but also recognising that long service on one station with a limited number of ships must make the majority of Australian personnel stale.[7] As a partial solution, in 1923 the Admiralty proposed that an Australian cruiser should be attached to either the Atlantic or Mediterranean fleets for 6-12 months.

The plan looked attractive to the ACNB, but only if a British cruiser could be spared to replace the Australian vessel, thereby avoiding a prolonged period when only two cruisers would be in company. Moreover, a reciprocal arrangement would sooth Australian political sensitivities, making it far easier to obtain additional funding. In April 1923, the Commodore Commanding HMA Fleet AP Addison, RN, identified the RAN's newly commissioned HMAS *Adelaide* as the most suitable exchange cruiser and work immediately began to maximise the number of Australian ratings

and officers on board.[8] In 1913, just 30 per cent of the RAN's personnel were not on loan from the RN, but after a decade of development, the ACNB managed to get *Adelaide*'s crew up to 75 per cent Australian, including the captain and four of the eight executive officers.[10]

Details for a regular exchange were to be confirmed at the 1923 Imperial Conference, but here Australian Prime Minister Stanley Bruce discovered that the Admiralty's plans to send the Special Service Squadron, centred on the battlecruisers, HM Ships *Hood* and *Repulse*, on a flag-showing 'Empire Cruise' had taken precedence. Although *Adelaide* would be welcome to join the squadron during its return trip, the additional expenditure on fuel did not allow a British cruiser to take her place in Australian waters.

Despite this obstacle, Australia's Chief of Naval Staff, Vice Admiral AF Everett, RN, who was in London with Bruce, did his best to not only reiterate the benefits accruing directly to the RAN's personnel, but the more general benefits to the collective security of the Empire and Australia's international reputation:

> The display of the Flag of the Australian Commonwealth by a Cruiser named after one of the State Capitals, built in Australia and manned by Australians in the ports of other Dominions who do not yet contribute appreciably to Empire Defence will be a unique gesture, and may possibly tend to induce the people of those Dominions to be more favourably disposed (by touching their pride) towards naval defence and expansion.

> [Furthermore] The visit of an Australian ship to United States ports will bring home more than anything else the fact that Australia has cast off the leading strings and has taken her place as a nation, and doubtless will call attention to Australian production and resources thus indirectly advertising the Commonwealth, which at present is not well known to Americans.[11]

Bruce received Cabinet approval to agree to the exchange, with legal authority coming from Section 37 of the Australian *Naval Defence Act 1910*, which provided for Australian and British warships to act together for joint or mutual action in relation to training or service.[12] Although the general employment of the ship would be subject to Admiralty orders, the RAN's regulations and instructions were to continue to apply to the personnel and internal organisation during the ship's absence.[13]

The Special Service Squadron arrived in Australian waters at the end of February 1924 and remained for two months before sailing from Sydney for New Zealand, Fiji and Canada. On 25 June the squadron entered Vancouver where the welcome was judged more enthusiastic than anywhere else but Sydney. Tens of thousands of

cheering Canadians lined the shores and hundreds of small craft escorted the big ships in. *Adelaide*'s presence as a representative of the Empire did not go unnoticed. 'Excitement' said the *Morning Sun*:

> Was intense from the moment when the advance guard of watchers at the look-outs first sighted the massive *Hood*. Behind her steamed *Repulse*, a Battle Cruiser second only in impressiveness to the *Hood*, and HMAS *Adelaide*, the Light Cruiser from the Royal Australian Navy, carrying the message of Empire co-operation in Naval defence.[14]

Adelaide became the first Australian warship to pass through the Panama Canal and after visiting Jamaica and the Canadian east coast eventually arrived at Portsmouth in September 1924. She spent three months with the home fleet, then a brief period with the First Cruiser Squadron in the Mediterranean before returning to Australia via the Suez Canal and Singapore. A major naval conference was underway in Singapore and in a rare show of Australian naval strength *Adelaide* joined briefly with HMA Ships *Brisbane* and *Sydney* (I). The former on its way to the China Station for six months as the next exchange cruiser and the latter bound for Australia with HMS *Concord*, thereby fulfilling for the first time the British side of the exchange.

Adelaide returned to Sydney in April and was promptly decommissioned, but the cruise had been a great success. Prime Minister Bruce declared the training opportunity to have been of incalculable benefit, both stimulating much greater interest in the navy generally and assisting in recruiting naval personnel.[15] The Admiralty too, saw continuing advantage in the interchange, arguing that since:

> An increasing proportion of the One Power Standard of Naval strength for the Empire may be provided by the Dominions, it is essential that the cooperation between the ships of the RN and those of the Dominion Navies should be as perfect as if all the ships belonged to one Service. This can only be achieved if the ships of the RN and Dominion Navies continually work together.[16]

The exchange program had started well, but the potential difficulties were to be plainly illustrated during *Brisbane*'s attachment to the China Squadron. Arriving in late February 1925, *Brisbane* became the first RAN unit to visit Japan and all seems to have gone well until June. At this point, news reached Australia of industrial disturbances in Shanghai with many hundreds of Chinese killed during riots. The papers, quick to see a story, noted that *Brisbane* was in China and operating under Admiralty orders, was no doubt involved in keeping the peace and that her shallow draught might prove particularly useful in riverine operations.

When asked in Parliament about *Brisbane*'s whereabouts and operations, the Minister for Defence Sir Neville Howse could only respond that she was due back in Australian waters about the middle of August. The Labor opposition went on the offensive. The navy, the opposition's parliamentary members declared, had

been created for the sole purpose of defending Australia, and not to interfere in the internal affairs of other countries. Expressing sympathy with the efforts of China to emerge from foreign oppression, members pointed out that the Labor party would never allow the Australian navy to be used in any industrial conflict in Australia, and nor should it be used to help foreign capitalists crush the Chinese proletariat.[17] The Leader of the Opposition Matthew Charlton declared himself entirely against the exchange program because it was unnecessary:

> Our naval men, in efficiency, compare favourably with those of Britain, or of any other country. They need no tuition other than what they can gain here. That was proved during the recent war.'[18]

The government responded as best it could, but was hampered by a lack of information, all communications having to go via London. In fact, the cruiser's only involvement in the troubles had been at Hong Kong, where her crew had been employed on 'essential military naval services' during a strike by Chinese workers.[19] This involved such unexceptional tasks as assisting at the naval hospital and manning tugs. Nevertheless, the harm had been done. The Australian Government asked the British authorities to ensure that in a crisis Australian cruisers 'should not be employed unless absolutely necessary in order to protect lives and property of British subjects.'[20] The Admiralty recognised that these restrictions seriously restricted the stations on which it would be wise to employ Australian cruisers, and the standing orders to the commanders in chief of these stations thereafter maintained a caveat:

> If the urgency of the case requires it you are permitted to use any Australian Warship attached to your command, for operations solely for the protection of British lives or property without reference to any high authority. If possible, however, the sanction of the Commonwealth Government should be obtained beforehand, and that government should invariably be informed of any action taken.[21]

Although in time of war, these restrictions were likely to disappear, there would undoubtedly be occasions when Dominion support might be hesitant or refused altogether. In 1925, the RAN had two new 10,000-ton cruisers, HMA Ships *Australia* and *Canberra*, being built in British shipyards. They had been ordered partly on Admiralty advice and partly in response to delays in the construction of the Singapore base, and Bruce described them as 'an effective and fair contribution' to Empire Defence.[22] But commentators in the United Kingdom were quick to point out the practical limits of collective defence:

> [British] naval authorities must reckon with the fact that the cruisers
> ... are entirely Australian, and are liable to be diverted by Australian
> political crosscurrents of which we have no knowledge ... Those who
> would cut down British cruiser construction because the Dominions are
> building, and advise us to rely on our brethren overseas for assistance,
> lose sight of this sort of thing. If the operations of Australian ships are
> to be tied down by local political considerations, things would be in a
> sad way with the British navy and commerce.[23]

In the meantime the exchange program continued and, demonstrating the paucity
of Australian naval resources, *Brisbane* was also allotted to the 1925-26 season,
this time exchanging with HMS *Delhi* of the Mediterranean Station. The Australian
cruiser had nevertheless returned from China with a substantial defect list, and
the ACNB decided it would be better to pay off *Brisbane* and recommission HMAS
Melbourne. Almost all *Brisbane*'s officers and men simply transferred across to
Melbourne, meaning that they were already a particularly experienced ship's
company.[24]

Melbourne became an independent command on 4 November 1925 with attachment
to the Mediterranean Station a month later. Thereafter it operated in both the
Mediterranean and Atlantic, being treated as if a British ship in a succession of
exercises. Its effectiveness may be judged by an efficiency test conducted in May
1926. Allowances were made for the portions of the test in which *Melbourne* was
unable to compete, but she placed a creditable third among the four more modern
cruisers in her squadron.[25] On occasion *Melbourne* even operated as a flagship for
a destroyer squadron. After six months of exchange service, the commander in
chief's farewell signal read in part:

> If the Australian Fleet possesses other ships which are as efficient as
> Melbourne there can be no doubt as to the part they will play in the
> defence of the Empire should the occasion arise.[26]

By August, *Melbourne* was back in Australia, where the local press took a somewhat
more measured tone, noting that two of her greatest distinctions had been being
sunk by *Hood* in one exercise and a submarine in another. Nevertheless, *Melbourne*
had 'spread the gospel of Empire' and met the rest of the cruiser squadron in aquatic
sports giving them a 'bad licking'.[27]

The British, however, were not to get their sporting revenge anytime soon. Because
of the long passage of time required, and differing leave and exercise periods in the
RN and RAN, the exchange scheme invariably reduced the in-company time for the
remainder of the Australian Squadron.[28] The next exchange period was due to begin
in November 1926, but the RAN declared that it would be fully occupied with the
huge effort required to recruit and train the ratings needed to man *Australia* and

Canberra, both of which were due to commission in 1928. Rather than a rotating six-monthly exchange the ACNB proposed a twelve-month exchange every alternate year. This was soon after extended further to an exchange every third year.

Nevertheless, once *Australia* and *Canberra* had been completed, their workups did allow for some interaction with British units. *Canberra*, for example, commissioned on 9 September 1928 and accompanied the Atlantic Fleet on its autumn exercises. Despite being newly commissioned, her ship's company earned praise from the Commander in Chief Admiral Brand, RN, who declared that *Canberra* 'proved that the Australian Navy worthily maintains the high standard of efficiency and smartness expected of it.'[29] Onboard *Canberra*, the Australian journalist Trevor Smith was told that the interchange had become practically indispensable for the Australian navy. The effect on training being 'beyond the most sanguine expectations'. [30] Indeed, he found that the attachment

> was something much more than casual association. It was another step in furthering and strengthening the alliance of the British and Dominion Navies, generally, bringing them together under a working scheme that closely resembles the new conception of the British Empire itself, autonomous communities, but owing allegiance to a common bond. It is obvious that a self-contained, self-supporting, and self-protecting British Empire and British Empire Navy are one and the same thing. One cannot exist without the other.[31]

These sentiments were clearly aimed at more than just the Australian public, for Smith, went on to argue that the success of the interchange had proved that Australia had got it right. The other Dominions must follow.[32]

Despite this apparent enthusiasm for Empire defence, the other Dominions did not follow, and even in Australia the return of a federal Labor administration in 1929 somewhat dampened enthusiasm for the imperial connection. When combined with the effects of the Great Depression it is not surprising that money available for naval defence went sharply into decline. Between 1926 and 1932 Australia's naval expenditure fell from £5 million to less than £1.5 million. Personnel strength reduced from 5000 to 3500.

The next exchange was due to take place in 1930, but using the excuse that *Canberra* had only recently been in English waters the ACNB allowed it to be delayed for twelve months. On this next occasion, *Canberra* was due to exchange with HMS *Shropshire*, but with just two weeks to go the Australian Defence Minister ordered a review. The ACNB pointed out that the recently signed *London Naval Treaty 1930* had included Australia's 2 heavy cruisers in the 15 allowed to the British Empire, that the exchange system was vital to maintain efficiency, and that sufficient provision existed in the estimates. The relative value of the Australian pound was so low, however, that Cabinet decided to cancel the exchange on grounds of cost. The scheme thereafter stood in abeyance until the financial situation improved.

The sudden cancellation did nothing for morale in either *Canberra* or *Shropshire*. But while the latter's crew bemoaned the amount of effort already expended preparing for sporting competitions in Australia, the situation in the Australian Squadron was far more serious.[33] With just the two heavy cruisers in commission, Rear Admiral Commanding Australian Squadron Edward Evans, RN, pointed out the difficulty of maintaining a competitive spirit as officers and men simply passed from one cruiser to the other.[34]

The Admiralty likewise grew increasingly concerned. Not only could the RAN not maintain the efficiency of the two heavy cruisers in commission, but there seemed no likelihood of replacements for the two elderly light cruisers still in reserve. Rather than attempting to build new ships, Admiral Sir Francis Hyde, RAN, the new Chief of Naval Staff, proposed that Australia use any available funds to operate additional cruisers paid for by the Royal Navy.[35] The idea was similar to a suggestion already made by the Admiralty to the Canadian navy, but altruism had its limits. The British simply could not afford to risk losing operational control of tonnage they had paid for. A compromise eventually allowed payment for a new cruiser – HMAS *Sydney* – to be staggered over several years, but in the meantime British officials reminded their Australian counterparts of their responsibility to maintain the RAN's efficiency as an integral part of the Empire's naval strength.[36]

For the Admiralty this meant renewed attempts to revive the exchange program, and in March 1933 the Secretary of State for Dominion Affairs received a clear statement of the declining state of naval cooperation. The number of senior officers on loan to the RAN had decreased, as had the number of higher Australian ratings coming to England for training. Without a resumption of the cruiser exchange 'the close touch that ought to exist between the two navies' was certain to diminish.[37] The message passed to Canberra, but here the government again used excessive cost as grounds to reject the recommencement of the exchange program. Instead the RAN was directed to take fullest possible advantage of the combined exercises with the New Zealand Squadron due to take place during the Australian Squadron's Spring Cruise.

There the matter might have rested, but in October 1933 Admiral Hyde noted the likelihood of a Royal visitor attending the Victorian centenary celebrations in 1934. A British cruiser would no doubt make the outward voyage and an Australian cruiser could be used profitably for the return.

Australia's Governor-General raised the issue with the King and in short order the matter was settled. HMS *Sussex* with the Duke of Gloucester embarked would arrive in October 1934 and *Australia* would return him to Portsmouth in March 1935 travelling via New Zealand and the Panama Canal.[38] Thereafter, *Australia* would join the Mediterranean Fleet for 12 months. The result satisfied all stakeholders, but in effect naval efficiency and economic conditions had been subordinated to affairs of state. The ACNB was among the last to be informed, but on hearing the news went public, expressing its 'pleased surprise' with the government's decision.[39]

Australia's captain was a British officer, but almost all her remaining officers were Australian, including her executive officer Commander Harold Farncomb, RAN, one of the first entries to the RAN College and a man later to become Fleet Commander. According to one source 75 per cent of the crew were Australian born and of these a third had never before been to sea. This had the potential to become something of a liability when working with the fully worked-up British ships operating in the Mediterranean, but Farncomb's personality had much to do with the subsequent success of the exchange.[40]

Australia joined the First Cruiser Squadron in the Mediterranean in May 1935 and was still there in August when the worsening crisis between Italy and Abyssinia threatened to drag Britain into war. With the Mediterranean Fleet below required strength the Admiralty began the movement of reinforcements from around the world. By October, the Mediterranean held the most powerful British naval force assembled between the wars, and had required not only the retention of *Australia*, but also the return of *Sussex* from Australian waters. Furthermore, the Commonwealth agreed to make available the newly commissioned *Sydney*, at the time on her way back to Australia. The Labor Party was again in opposition and claimed that the cruiser was being 'decoyed there by Imperial intrigue', but do not seem to have raised the issue to the same heights as *Brisbane* and China.

In any case, a near continuous series of exercises at the fleet and squadron level brought the two Australian cruisers of the self-styled 'Foreign Legion' up to near wartime efficiency. Still retaining echoes today, one among these exercises was the tactic for dealing with an asymmetric attack launched by Italian motorboats. Carrying a crew of three, these consisted of not much more than a shell, a torpedo and a powerful engine, but had proven very effective against the Austrian navy during the late war. Within the Mediterranean Fleet, at the order 'Man and Arm Boats', all power and pulling boats were rapidly loaded with machine guns, rifles and rockets, launched, and then began patrols with the aim of using automatic fire to keep the threat at distance.[41]

Yet even in the midst of the crisis, sporting reputations maintained their priority, and we know far more about *Australia*'s successive victories in the rugby and the cruiser regatta than we do about her preparations for a possible war. Yet we do know that both Australian cruisers were fully integrated into the British sanctions campaign and in the planning for attacks on the Italian navy. *Australia*, for example, was on the outbreak of war tasked to take HMS *Berwick* under her orders and cover the withdrawal of the aircraft carrier HMS *Glorious* after an air strike on the main Italian base at Taranto. The crisis eased without the need for offensive action but, commenting on Australia's ready cooperation, a British journal made much of this reminder to the world of the 'unity of British Empire sea-power' noting particularly that the material contribution, although substantial, shrank 'into relative insignificance as alongside the moral effect of the step'.[42]

With the return of *Australia* and *Sydney* to home waters in August 1936 the exchange scheme finally came to an end, although it is not clear whether this was a deliberate decision or simply a result of the outbreak of war in September 1939. It is noteworthy, however, that despite the recent successful integration of the two Australian cruisers into the Mediterranean Fleet, the Admiralty remained mistrustful of Australian politicians. In the event of an approaching war with Japan, the Admiralty had previously intended to use the most modern of the RAN's cruisers to exchange with the old cruisers accompanying the British Main Fleet when it arrived in Eastern waters from Europe.[43] However in 1938, apparently prompted by continuing uncertainty as to when or if, Australian warships would be released by the Australian Government, the Admiralty chose to remove the uncertainty. Instead of providing reinforcement, the RAN's object in the early stages of war became solely the defence of trade in Australian waters.[44] This was the state of play when the war in Europe began, and only when it was clear that the likelihood of immediate Japanese entry had diminished did Australia gradually release vessels to Admiralty control.

Conclusions

It is difficult to be definitive about the achievements of the exchange cruiser scheme. Although the archival record contains much on the behind the scenes discussion, very little exists on the practical aspects. Certainly, the RAN's effective integration during the Abyssinian crisis and more particularly World War II would indicate that the scheme's aim was achieved. Yet in view of the extensive and multi-level contacts between personnel, doctrinal compatibility and technical interoperability between the RN and RAN between the wars was never likely to be a problem. Indeed, rather than the cruiser exchange, the routine exchange of executive branch officers was probably of equal or greater importance to long-term operational performance.

But what we can say, is that when tested the system of cooperative naval defence worked, and that British commanders seem to have been genuinely satisfied with the performance of the Australian exchange cruisers they had operating with them. This is reflected not only in British comments on performance and contribution, but also in the regular use of the Australian vessels as fleet flagships. Moreover, the specific experience gained by Australian officers such as Farncomb and John Collins when operating with the Royal Navy, must have been very useful when it came to commanding combined forces later in their careers.[45] Likewise, the junior ratings in the exchange cruisers got to see the world, and they would have become the senior sailors who ensured the efficient running of the wartime RAN and kept it working post-war. Undoubtedly, the confidence gained by successfully matching their performance against the most professional navy in the world would have done much to assist the efficient coming together of the Australian crews.

In finishing, however, I would just like to note that in 2005, 81 years after *Adelaide* sailed from Sydney with the Special Service Squadron, HMAS *Anzac* embarked on her own around the world deployment. In what might almost have been a paraphrasing

of Admiral Everett's 1923 remarks, *Anzac*'s objectives were to demonstrate and benchmark the RAN's capabilities, enhance proficiency, promote goodwill, demonstrate Australia's commitment to global security, support Australian industry and encourage job satisfaction in the naval workforce. Describing the deployment as a great success *Anzac* recommended that it be repeated at four-year intervals, and in 2009 HMA Ships *Sydney* (IV) and *Ballarat* did just that.

Times change, but many of the requirements of naval operations have a certain permanence. Perhaps, seven decades after the last cruiser exchange, there are still a few lessons we might learn from their experience.

Notes

1. JC Mitcham, 'Defense by Cooperation: The Admiralty and the Postwar Role of the Dominion Navies', Paper Presented at the 2007 Annapolis Naval History Seminar, p. 13.

2. National Archives of Australia MP1049/5, Item 2026/3/31, Empire Navy Policy and Cooperation 1923, Committee of Imperial Defence Report 194-C, 26 March 1930.

3. For uniform policy see Commonwealth Navy Orders, 7 June 1940; for paint policy, see Commonwealth Navy Order 109/1934.

4. N Lambert, *Australia's Naval Inheritance: Imperial Maritime Strategy and the Australia Station 1880-1909*, Papers in Australian Maritime Affairs No. 6, Sea Power Centre – Australia, Canberra, 1998, p. 19; and D Stevens (ed), *The Royal Australian Navy: The Australian Centenary of Defence Volume III*, Oxford University Press, Melbourne, 2001, Chapter 2.

6. Report on Naval Estimates 1920-21, Sea Power Centre - Australia.

7. Mitcham, 'Defense by Cooperation', pp. 20-21.

8. National Archives of Australia MP1049/5, Item 2026/3/31, Letter, CCAF to Naval Board, 5 April 1923.

9. N Tracy (ed), *The Collective Naval Defence of the Empire,* Navy Records Society Publications No. 136, Ashgate, p. 416.

10. Navy List, April 1923, p. 25.

11. National Archives of Australia MP1049/5, Item 2026/3/31, Letter, 1st Naval Member to Prime Minister, 26 October 1923.

12. Section 37, has since been superseded.

13. National Archives of Australia MP124/6, Item 603/216/261, Letter, Navy Office to CO Melbourne, 14 November 1925.

14. VC Scott O'Connor, *The Empire Cruise*, privately printed, London, 1925, p. 246.

15. Tracy, *The Collective Naval Defence of the Empire*, p. 415.

16. National Archives of Australia MP1049/5, Item 2026/3/31, Admiralty, Memorandum of Interchange of RN and RAN Light Cruisers, August 1924.

17. House of Representatives Debate, 25 June 1925, p. 463-467.

18. House of Representatives Debate, 3 July 1925, p. 704.

19. National Archives of Australia MP1049/5, Item 2026/3/44, Letter, Commodore Hong Kong to Commander in Chief China, 15 December 1925.

20. National Archives of Australia MP1049/5, Item 2026/3/44, Cable, Governor-General to Secretary of State for the Colonies, 27 June 1925.

21. Tracy, *The Collective Naval Defence of the Empire*, p. 473

22. Stevens, *The Royal Australian Navy*, p. 73.

23. *The Journal of Commerce*, cited in the *Herald*, 4 July 1925.

24. National Archives of Australia MP 124/6, Item 603/216/261, Letter, Navy Office to CCAF, 8 September 1925.

25. National Archives of Australia MP 124/6, Item 603/216/320, First Cruiser Squadron Memorandum, 16 June 1926.

26. National Archives of Australia MP124/6, Item 603/216/320, Signal, Commander in Chief Med. to HMAS *Melbourne*, 30 June 1926.

27. *The Argus*, 25 August 1926.

28. National Archives of Australia, MP1049/5, Item 2026/3/12, Despatch from Naval Representative London, 8 June 1926.

29. Hubert Brand, 'Introduction', in T Smith, *Fleet Moments*, London, Selwyn & Blount, 1928, p. 11.

30. Smith, *Fleet Moments*, p. 39.

31. Smith, *Fleet Moments*, p. 36.

32. Smith, *Fleet Moments*, p. 14.

33. During afternoons and evenings HMAS *Shropshire*'s upper deck was described as a circus arena, 'with shadow boxers, sparrers, men skipping, running, jumping, and whenever possible the crews of whalers, gigs, galleys and cutters were out rowing or sailing in the harbour'. JA Gurr, *In Peace and in War: A chronicle of experiences in The Royal Navy (1922 to 1946)*, Square One Publication, New York, 1993, p. 34.

34. National Archives of Australia, MP1049/5, Item 2026/3/47, Report RACAS to Naval Board, 29 May 1931.

35. James Goldrick, 'The Naval Professional: Admiral Sir Francis Hyde KCB, CVO, CBE, RAN', in David Stevens and John Reeve (eds), *The Navy and the Nation: The Influence of the Navy on Modern Australia*, Allen & Unwin, Crows Nest, 2005, p. 340.

36. Tracey, *The Collective Naval Defence of the Empire*, p. 464.

37. National Archives of Australia MP1049/5, Item, 2026/3/47, Cable, Secretary of State for Dominion Affairs to Prime Minister's Department, 30 March 1933.

38. CNO 11 December 1934, No. 205. 'Sussex attached Australia Squadron from 28 Nov 1934'. No. 206 'Australia attached to the Royal Navy from 10 Dec 1934 until further orders'.

39. *The Argus*, 18 January 1934.

40. Alan Payne, *HMAS* Canberra, Naval Historical Society of Australia, Sydney, 1973.

41. 'The Navy Abroad', cited in *The Navy, Army, Air & Munitions Journal*, 1 May 1936, p. 11-12.

42. 'Naval and Military Record', cited in *The Navy, Army, Air & Munitions Journal*, 1 January 1936, p. 17.

43. National Archives of Australia MP1049/9, Item 2026/3/81, Letter, Admiralty to Naval Board, 11 September 1936.

44. D Stevens (ed), *In Search of a Maritime Strategy*, Canberra Papers on Strategy and Defence No 119, Strategic and Defence Studies Centre, Australian National University, Canberra, 1997, p. 81.

45. John Collins was the executive officer of *Sydney* in 1935.

3 Listening for the Empire 1920-41

Joe Straczek

The 'Burden of Empire' was a journalistic phrase often used during the late 19th and early 20th centuries to describe the sense that Great Britain was solely responsible for the defence of the conglomerate of Dominions, self-governing colonies, colonies, crown colonies, protectorates and other geological entities that constituted the British Empire. This phrase was usually accompanied by a table showing British naval and military expenditure as opposed to that of the various constituents of the Empire. Whilst this type of article may have made good press, it did not accurately reflect the contribution to the overall collective defence of the Empire.

During the Boxer Uprising, Boer War and World War I (WWI) the Empire's contribution could be measured in terms of men, equipment and raw materials. In peacetime, such a measurement is more difficult. In the case of the army and air force, peacetime contributions to imperial defence were limited to exchanges of a few personnel and correspondence. With the possible exception of the Indian Army, there were no overseas military expeditions to which Empire soldiers were committed. The navy however, represented a different case.

During peacetime, the Dominion and Colonial navies, where they existed, trained, operated and, in the case of Australia, loaned and exchanged cruisers with the Royal Navy (RN). In addition, men from the various imperial possessions also enlisted in the RN, and these possessions provided the navy with bases from which it could operate and maintain a global presence.[1] Behind this public face of cooperation lay a more secretive one, cooperation in a worldwide naval intelligence network. This global naval intelligence network had its origins in 1883 when the Admiralty began assigning dedicated intelligence officers to various posts around the world. As the political and technological circumstances changed so did the Empire's contributions to this global intelligence network.

This article details the contribution of the Pacific Dominions and other smaller colonies to the development of a RN signals interception and direction finding network covering the Asia-Pacific region during the inter-war years.

The colonial contribution to this network commenced in March 1921 when, during the Penang Naval Conference it was proposed that two groups of direction finding stations be established in the Asia-Pacific region: the first at Seletar (Singapore), Kuching (Sarawak) and North Borneo; the second at Nauru, Rabaul (New Britain) and in New Guinea. In addition to these, ships used for trade protection were also to be fitted for direction finding work, and a number of other portable units provided.[2] The intention was that this extensive network would form part of the Pacific Naval Intelligence Organisation, to be established at the Singapore Naval Base when this

facility was fully operational. At the time of the Penang conference there existed in Australia, New Zealand or Canada neither specialist signals intelligence facilities or the trained people to operate them.

The RN also recognised this requirement for trained personnel and they provided the RAN representative at the conference with a copy of the Japanese Telegraphic code for Naval Vessels. The intent was to commence training RAN telegraphists in the interception of Japanese Morse. The code was the Japanese equivalent to Morse code.

The intention, in 1921, to train naval telegraphists in reading Japanese Morse is interesting when it is considered that after WWI, work on naval codes and ciphers by the British virtually ceased.[3] The reason for this halt was the lack of a suitable naval target and the fact that the newly established Government Code and Cypher School was concentrating on diplomatic intelligence. However, this decision was reversed in 1924, when a Naval Section was added to the school and naval interception stations were established to complement the existing direction finding capability.

The raw data for this section was initially obtained from the RN's intercept station at Flowerdown, Hampshire, England. This station was to prove inadequate for the task of intercepting Far Eastern and other traffic, and a system of using British ships on foreign naval stations was put in place. This new method of signals intelligence collection was given the designation 'Procedure Y'. As part of these changes, a small naval cryptographic unit was established and attached to HMS *Hawkins*, flagship of the China Station. To assist in the provision of raw material for the Hong Kong cryptographic unit, an intercept station was established on Stonecutter's Island in Hong Kong, with a second station eventually established in Singapore.

The placing of the cryptographic unit onboard the flagship was to prove to be an inadequate solution. When the flagship sailed from Hong Kong, the cryptographic unit either went with the ship or had to be landed. If they sailed with the ship then intercepts had to be sent to them by wireless telegram, an insecure form of communications. If they remained in Hong Kong any intelligence gained had to be sent to the commander in chief by telegram. Ultimately, it was decided that the cryptographic unit should remain ashore.

In 1935 a new combined intelligence and cryptographic organisation was established in the Far East by the amalgamation of the various existing single service intelligence bodies with the naval cryptographic unit. The objective of this new organisation was to coordinate the collection and evaluation of intelligence in the region better. This new organisation was co-located with the existing cryptographic unit operating at the RN dockyard in Hong Kong. The new organisation was designated the Far East Combined Bureau. Though described as a combined organisation much of the cryptographic work done by the bureau was naval in nature, almost to the exclusion of the other two services, as neither the army nor the Royal Air Force had the required facilities or

personnel. Though established in Hong Kong this was not necessarily the permanent home of the organisation, as the naval base at Singapore was always intended to have, as one of its roles, a higher command function in wartime.

A RN captain designated Chief of Intelligence Staff headed the new organisation. He also served the Head of the Naval Section, which included the Far East Direction-Finding Organisation whose primary targets were German, Japanese, Russian and Italian naval units. The direction-finding organisation and the Admiralty's Reporting Officer organisation enabled the bureau to maintain an extensive plot detailing the movements of Japanese naval and merchant ships as well as other shipping of naval interest. There was also an Army and Air Force Intelligence Section. Each Section communicated directly with their parent intelligence organisation in London. The wireless telegram and direction finding section of the bureau, designated 'W' Section, also communicated with the signal school in England. The main naval signals intelligence targets of the bureau were Japan and Russia.[4]

The duties assigned to the bureau were to 'collect all intelligence from all principal Authorities in the Indian-Pacific Oceans'.[5] Each of the individual services, through their own organisations, did the collection of intelligence. The service sections would then select the information that they saw as being important and this would be pooled for collation and distribution. Distribution of the intelligence would be in either the form of a statement of fact or an appreciation. Each service section would distribute the intelligence to its respective command. In the navy's case, the principal recipients were the Admiralty, the Commander in Chief (CinC) China and the CinC East Indies. If a combined appreciation was compiled then this would be distributed to the three Services as a whole. Any differences of opinion that occurred in the compilation of this combined appreciation would be noted. Their aim was to build up a picture of the Japanese order of battle and provide advance warning of the possible outbreak of hostilities with Japan.[6]

The work of the Far East Direction-Finding Organisation and the intercept stations was controlled from London by the Y Sub-Committee, which was part of the Co-ordination of Wireless Telegraph Interception Committee. The intercept program of the services was approved by this committee and determined in part by the needs of the 'cryptographers and half by the needs of traffic analysts'.[7]

Because of the efforts applied by both the bureau and cipher school, the main Japanese military and naval ciphers had been broken by 1935.[8] This meant that naval work could be redistributed so that by 1937 the Japanese naval codes and ciphers were being worked on exclusively by the bureau. The Naval Section at the cipher school was working on other naval ciphers. However, as a consequence of changes to the Japanese cipher systems in 1938 and 1939, which rendered them unreadable, it became necessary to employ army cryptographers at the school on Japanese naval ciphers. These new systems began to yield to the cryptographic assault by September 1939. The first to do so was the Japanese Fleet code. However

in March 1941 Commander JB Newman, RAN, the officer in charge of the RAN's shore wireless stations and Director of Naval Signals and Communications at Navy Office in Melbourne, reported that the bureau's W Section had 'been virtually the sole source of intelligence since October 1940, when the Japanese codes and ciphers were last changed'.[9] Unfortunately, no information is provided as to exactly which codes these were. Newman went on to state that the degree of success being achieved had improved and that 'Consular, Diplomatic, four figure naval and Merchant Ship broadcast codes and ciphers have now been made available from friendly sources'.[10]

The ability of the naval high-frequency/direction-finding (HF/DF) stations at Stonecutter's, Kranji and Bombay Fort (India) to track ship movements was tested in early 1939 when a tracking exercise was held using the cruiser HMS *Kent* as the target. These stations tracked *Kent* on her voyage from Hong Kong through to Sandakan in Borneo. The results achieved were mixed, with *Kent* at one time being fixed by these stations well to the west of Saigon. At other times, reasonable positions were obtained. The exercise clearly demonstrated the need for additional HF/DF stations in the region, especially in the south.

As relations with Japan deteriorated, the decision was taken to relocate the bureau to Singapore. On 2 August 1939, HMS *Birmingham* sailed for Singapore carrying much of the equipment and records of the bureau. Throughout 1940 and 1941, the workload of the signals intelligence sections increased. In order to cater for this additional workload, sailors of the British Malaya Command were retrained as Procedure Y operators and used to operate the intercept receivers.

By 1940, the Far East Direction-Finding Organisation consisted of eight operational HF/DF stations with a further seven stations under construction, or planned.[11] Intercept stations were located at Stonecutter's and Kranji. These stations were complemented by those constructed and operated by Australia, Canada and New Zealand.

Australia

The Australian contribution to the establishment of the British signals intelligence capability in the Asia-Pacific region commenced in 1921. Two unrelated events marked the start of this contribution.

In February 1921 Paymaster Lieutenant TE Nave, RAN, was sent to Japan for language training. The potential usefulness of foreign languages had long been recognised by the Australian Navy: a 1912 Navy Order required all commanding officers to report annually ratings who possessed a knowledge of foreign languages.[12] Also as previously mentioned the Australian delegation at the Penang Conference in March 1921 was given a copy of the Japanese Telegraph Code for Naval Vessels. This code was subsequently reproduced and distributed to the ships of the Australian Fleet with instructions that telegraphists were to be exercised in the code once a week.[13] In addition to this, telegraphists under instruction at the Signal School at HMAS

Cerberus, the RAN's main shore establishment at Westernport in Victoria, were also to be trained in the reception of Japanese Morse. In an attempt to provide a degree of security to the code and its possession by the RAN, it was originally intended to be described in official communications as the 'Asiatic Telegraphic Code'. This description was subsequently changed to the even more innocuous description of the 'B telegraphic code'.

Following representations from the Fleet Commander, and because of Admiralty guidance, RAN telegraphists training in Japanese code was reduced to an *ad hoc* arrangement. One result of this decision was that when a qualified rating was required, in October 1924 to assist Nave in cryptographic work during the visit of the Japanese Squadron to Australia, none could be found. Steps had to be quickly taken to train one.

Notwithstanding the Admiralty instructions to limit Procedure Y activities, the Secretary to the Australian Commonwealth Naval Board (ACNB) informed the Australian Naval Representative in London in 1924 that the RAN would be acquiring automatic wireless telegram recorders, which would aid in the copying of Japanese traffic. He also pointed out certain inconsistencies with the copy of the Japanese code held and requested advice from the Admiralty. A revised copy of the code was forwarded to Australia, as was a request to forward any intercepted messages to the Admiralty.[14] Prior to being dispatched to London, all intercepted Japanese messages were forwarded to Lieutenant Nave for examination. By this stage RA Ball, a civilian employee of the Department of Navy, was in Japan for language study; some time later a second naval officer, Paymaster Lieutenant WE McLaughlin, RAN, was also sent.

In July 1925, Nave was loaned to the RN and posted to *Hawkins*, the China Squadron's flagship.[15] He wrote to Australian authorities in September 1925 informing them of his functions, as a code breaker, and of his relocation to HMS *Titania*. By this stage, wireless telegraph Red Forms, for recording intercepted Japanese messages, had been received from the Admiralty and in November 1925, a group of completed forms were dispatched to the Director of Naval Intelligence (DNI) in London. These reports crossed correspondence from the Admiralty informing the ACNB that 'the results of experience of the China Squadron be awaited before any action is taken to arrange for the co-operation of the Royal Australian Navy'.[16] Yet again an attempt by the RAN to commence signals interception resulted in a false start. The Admiralty was informed on the 22 January 1926 that the RAN had ceased the interception of Japanese wireless telegraphs.

In April 1926, the Admiralty instructed the CinC China Station to provide a report detailing information that may be of assistance to the ACNB in conducting signals intelligence operations. By the second half of 1926, the ACNB was receiving copies of various instructions and directives concerning signals intelligence operations from the CinC China Station. Following receipt of these memos and a report on Japanese communications compiled by Nave, it was proposed that the RAN recommence

Y work concentrating on intercepting messages from the Japanese Mandated Territory. This proposal was given greater weight when the Assistant Chief of Naval Staff proposed using the sloop HMAS *Mallow*, fitted out with radio equipment, to eavesdrop on the Japanese in the Mandated Territory. After further investigations, it was decided to use the steam yacht *Franklin* for the task. *Franklin* had once belonged to the RAN but was at this stage in the service of the Administrator of the Mandated Territory of New Guinea. As such, her presence in waters close to the Japanese mandated territories would not draw any attention to itself.

A team of intercept operators and their equipment was embarked in *Franklin* and commenced monitoring operations on 22 April. The operation was concluded on 30 June 1927. Not all of this time had been spent on *Franklin*, as the vessel remained in port during the final stages of the operation. Information obtained during the course of the operation included Japanese wireless telegraph procedures, secret call signs and technical details of the stations. A total of 97 recordings were made of the Japanese transmissions for later investigation. The report of this operation was forwarded, along with the recordings, in the custody of Nave, to the DNI in London in November 1927. After examination, most of the messages were identified as either commercial or practice messages. On the basis of this discovery, the Admiralty advised the ACNB that it did not consider it worth the RAN attempting any cryptographic work as sufficient information was being obtained from units on the China Station. However, the work of identifying telegraph stations and their procedures was considered of value, and the area where the RAN could contribute.[17] Whether it was the intention of the Admiralty to stop the development of an independent Australian cryptographic capability is not known, but this was the result of such correspondence. The RAN maintained only a small cadre of Y-trained telegraphists and no special facilities were constructed during the 1920s. By the Admiralty's own actions, the RN's future ability to obtain details of Japanese naval traffic in the region had been greatly reduced.

While the Minister for Defence had been briefed on the original proposals of the Penang Conference for the RAN to establish direction-finding stations in support of the Royal Navy. There appears to be no evidence to suggest that he or anybody else in the government of the day were aware of the interception operations initiated by the RAN and the degree to which the Admiralty was involved. Correspondence on this issue was dispatched on a navy-to-navy basis and there was not, at this stage, a significant requirement for expenditure on facilities that would attract government attention.

Though the RAN recognised the importance of signals intelligence, no real progress was made throughout the 1920s in establishing a signals intelligence capability. Contradictory guidance from the Admiralty, and lack of facilities, funds and labour, all contributed to delaying and hindering either any independent or supportive role. This situation began to change as the 1930s progressed.

In May 1936, the ACNB informed the Admiralty of their broad plans for the development of an RAN signals intelligence capability.[18] Included in the letter were the details of arrangements made by the RAN to cover mandated territory traffic, using the services of an ex-RAN telegraphist who was still an active member of the RAN Volunteer Reserve and employed as a civilian radio operator on Nauru Island. This operation continued until 1939 when a new administrator, who was not a naval reserve officer, was appointed. Because of this appointment, the RAN closed down this listening station.

Construction of the HF/DF stations proposed at the Penang Conference in 1921 was also forecast, though not in the locations originally proposed. No station was built in New Guinea as the area was deemed to be too exposed. A station was erected at Darwin instead. A station initially proposed for Rottnest Island in Western Australia was subsequently located at Jandakot, near Fremantle, and a third station originally intended for Sydney was built at Canberra. As well as the HF/DF stations, an intercept station was to be built for the navy, in Canberra. In 1938, the Shore Wireless Service was established to operate the navy's HF/DF network. These RAN stations formed part of the RN's Far East Direction-Finding Organisation.

Coupled with the development of facilities, recruiting and training of operators for the stations also commenced in both Australia and New Zealand, though it was not until late 1939 that the prospect of creating an independent cryptanalysis organisation was investigated. Commander Nave, had returned to Australia for medical reasons, and assisted in the establishment of a small cryptographic organisation known as the Special Intelligence Bureau within Navy Office. In April 1940, Prime Minister RG Menzies, wrote to the Secretary of State for Dominion Affairs seeking guidance although not everybody saw the need to seek British views and approval on the subject of an independent cryptanalysis organisation.[19] The British response, which was dispatched in October 1940, was not supportive 'for the present' of the idea of a large scale Australian based organisation.[20] However, it did propose a number of actions, such as training of selected personnel in London and continuation of existing cooperative programs. The main concern appears to have been to prevent a duplication of effort, though this could also be interpreted as an attempt to prevent Australia from conducting an independent analysis of the same information being obtained by Britain.

In January 1941, Captain FJ Wylie, RN, the outgoing Chief of Intelligence Staff, visited Australia for discussions on intelligence and signals intelligence matters. In the course of these discussions, he advised that, with respect to Japanese naval traffic, the bureau receivers at Kranji could not read the traffic of the Combined Fleet by day. Some assistance in this was being provided by Stonecutter's and Esquimalt. Kranji also could not read the day traffic originating in the Mandated Territory. Coverage of these areas by Australia was requested. Of lesser importance, but still requested, was assistance in covering Japanese consular and commercial (high and medium frequency) traffic, and South China traffic.

The bureau was also interested in Russian naval and general traffic, as the reception of these transmissions at Kranji was also poor.[21] This traffic had been previously monitored by Stonecutter's and Auckland but both stations had been re-tasked by the British onto copying the Japanese five-figure code (latter to be designated JN25). The Australians were advised that the Russian material was required mainly for traffic analysis purposes.

In light of these requests, an arrangement was reached with the Australian naval authorities whereby the RN would intercept Japanese communications covering 'Japanese and Asiatic waters; and of the Combined Fleet, 1st Fleet, 2nd Fleet and their associated units in any waters'.[22] Australia would provide intelligence, to the best of her abilities, on 'Japanese Naval activities in the Mandated Territory, and of the 4th Fleet'.[23]

By the outbreak of the war in the Pacific, the RAN had in place a HF/DF and intercept organisation supported by a small cryptographic bureau. This nucleus organisation would prove to be invaluable in the coming years.

Canada

In 1925, the Admiralty requested that the Canadians build an intercept and direction finding station at Esquimalt on Vancouver Island.[24] The station was controlled by the Admiralty and instructions were issued to it via the Canadian DNI. The personnel who operated the station were trained by the RN at either Stonecutters Island, Hong Kong, or latter in Singapore. The Canadians did not attempt any evaluation of the raw data collected by this station. The intercepts were dispatched to Hong Kong via a mail steamer. Because of this, they took too long to arrive to be of any immediate operational value. Although not of operational value, the Canadian material was useful in helping to determine the Japanese telegraph organisational structure, and procedures and the structure of the Japanese codes.

In 1939, the intercept station at Esquimalt was given the task of monitoring Japanese commercial traffic relating to shipping movements in North and South America. A second station was established in nearby Gordon Head in June 1940. This was to remain the situation until the outbreak of the Pacific War. Because of an agreement between Britain, Canada and the United States, the Canadian stations were to form part of the US west coast network.

New Zealand

The third Pacific Dominion to provide assistance was New Zealand. In early 1939 the staff officer (intelligence) Wellington, advised the Admiralty that Awarua wireless station was conducting interception operations. The Admiralty requested details of these operations and was advised they were intercepting commercial transmissions in order to keep track of German ships in the area.[25] By late 1939, the New Zealanders were also forwarding to the Admiralty some intercepts of Japanese traffic. These

intercepts could have been achieved by obtaining copies of coded Japanese diplomatic telegrams at the point of origin, as the contact for these was Mr WR Newall, Acting Deputy Director General Post and Telegraph Department in Wellington.[26]

In early 1940, Warrant Telegraphist Philpot and another New Zealander went to Singapore to establish direct liaison with the bureau. In November 1940, New Zealand forwarded to Singapore a short report on the telegraph practices of Japanese merchant ships of the Mitsui Line.[27] This type of information was useful because a change in the communications practices or procedures of a ship or group of ships could indicate that the vessel was being used for military purposes or whether these ships were passing information of a military nature. The New Zealand organisation also provided the bureau with reports on the noon positions of Japanese merchant ships, known as Special Shipping Reports. The Special Shipping Reports were of particular interest to the bureau, as any unusual movements of Japanese merchant ships could provide the first clues as to impending hostilities.

By 1941, the New Zealanders were also working on copying the Japanese five-figure operational code, Japanese consular traffic and on Russian Far East wireless traffic for the bureau. From small beginnings, the New Zealand naval signals intelligence capacity would develop so that it possessed a chain of HF/DF stations located at Awarua, Musick Point (Auckland), Waipapakauri and Suva (Fiji).[28] These stations had direct communications with each other so as to be able to obtain simultaneous bearings. Their work was directed and coordinated by the bureau. Additional radio intercept stations would be established at Awarua, Wairouro, Suva and Nairnville (Wellington). Any transmissions intercepted by these New Zealand stations were sent to Navy Office in Wellington for on forwarding to the RN in Singapore and subsequently the RAN in Melbourne.

To further enhance electronic surveillance coverage of the Pacific Ocean the Admiralty commenced construction of a direction finding station at Suva during late 1940. This station eventually came under the control of the Royal New Zealand Navy. Completion of the station at Suva was significantly delayed due a severe hurricane and subsequent bad weather. During the hurricane, the main masts of the station were blown down. Heavy rains followed the hurricane and this flooded the rice fields over which the power lines were to be erected. Once the weather cleared, construction was further delayed because the army in Fiji, which was to erect the power lines, did not see the completion of the station as a high priority. Notwithstanding all these setbacks, the station finally commenced operations on 13 May 1941. Once operational, the Suva station began keeping a watch on Japanese units in the Mandated Islands and the Combined Fleet. Commencing on 17 May the station was also allocated the duties of covering German Series B and Norddeich Silent Periods, when German U-boats would be transmitting.[29] The Suva site proved a major asset. Given the geographical location of Fiji in relation to the Japanese Mandated Islands, it could receive Japanese naval traffic 24 hours a day. The officer in charge of the Suva HF/DF station proposed that

provision be made for the erection of additional interception facilities at Suva and the required personnel be posted to operate the station. The increase in capability would allow for the interception of a greater volume of traffic than was then the case.[30]

Like the British and Australian organisations, the New Zealanders were having difficulty finding suitable workers. This problem to some extent vindicated the British concerns over the Dominions establishing their own cryptographic organisations. However, in the case of the direction finding stations it was the British who wished to see them established as part of the Far East Direction-Finding Organisation. The work force requirements for direction finding had to compete against other requirements such as the coast-watching organisation being established in the central Pacific Islands by New Zealand. The difficulty in getting suitable workers also resulted in a distortion of the organisational rank structure at the direction finding station at Suva. This problem was alleviated with the promotion of one of the junior sailors to petty officer.[31] As well as establishing a number of direction finding stations, New Zealand created its own small cryptographic organisation. This was done with the support of the chief of intelligence staff, who wished to establish a number of nucleus organisations in as many parts of the Empire as possible. On the surface this might seem to have gone against the idea of not dispersing assets, it did create a pool of trained, or semi-trained, personnel that could be utilised as required. In addition, the facilities thus developed ensured that if some were to be lost then there were others available to fill gaps.[32] In establishing their cryptographic organisation, New Zealand had to start from scratch, even to the extent of identifying and locating basic texts such as *The Solution of Codes and Cyphers* by Louis Mansfield.

Royal New Zealand Navy ships were specifically tasked to cruise close to the Japanese Mandated Islands and monitor wireless traffic there.

Other Contributors

Whilst this paper has concentrated on the contribution of the major Pacific Dominions and colonies there were other contributors to this effort as well. Three intercept stations were located in South Africa situated at Klaver Camp (Simon's Town), Point Natal (Durban) and Roberts Heights (Pretoria).[33] These sites were primarily used to cover the South Atlantic, but their geographical position allowed them to be used to cover the Indian Ocean as well.

One of the more unusual British stations intercepting Japanese traffic had been established on the island of Mauritius, in October 1940, by a Lieutenant Commander Twining, RN, in the truly English traditional manner of a gentleman adventurer.[34] Commander Twining personally established and funded an intercept station employing local civilians under cover of censorship activities. As can be expected the authorities is London were not amused. However, as the product from this site was so valuable the Y Board sanctioned its continued operation.

The full scale of the Empire's contribution can be judged by the list of stations that made up the Far East Direction-Finding Organisation in October 1941. These stations were:

- Stonecutters Island (Hong Kong)
- Kranji (Singapore)
- Kuching (Sarawak)
- HMAS *Coonawarra* (Darwin)
- HMAS *Harman* (Canberra)
- Jandakot (Perth)
- Direction Island (Indian Ocean)
- Penang (Malaya)
- Gombak (Malaya)
- Esquimalt (Canada)
- Auckland
- Waipapakauri (New Zealand)
- Awarua (New Zealand)
- Durban (South Africa)
- Aden
- Mauritius
- Bombay
- Colombo
- Suva (Fiji).

Trincomalee could be added to this list, as it was nearing completion.

As well as providing the facilities or land for these facilities there was also an unknown number of colonial personnel operating and supporting these stations.

Conclusion

The establishment of the imperial signals intelligence network in the Far East highlighted the benefits and pitfalls of imperial association. The RN benefited from the resources being applied to this organisation by the Dominion navies. These navies provided facilities, trained personnel and raw information for use by the British. The facilities and personnel provided by the Dominions absorbed

scarce funds that they may have preferred to use to satisfy other requirements. The geographical dispersion of the Dominion and colonial facilities provided the RN with a degree of coverage that it may not have otherwise had.

When in December 1941, the Japanese finally struck, a proportion of the imperial, and for that matter American, signals intelligence infrastructure that existed in the Asia-Pacific region was destroyed. The British lost facilities at Hong Kong, Kuching, Malaya and Singapore. However, those in Australia, New Zealand, Canada, Fiji, India and on the periphery of the Indian Ocean survived. The wide dispersal of imperial possessions across the Pacific and Indian ocean areas provided Britain with a strategic advantage that Japan could never match or overcome. However, this strategic advantage could only be realised with the cooperation and support of the constituent members of the Empire.

The downside of this imperial cooperation for the Dominions was that often their own requirements became secondary considerations in the overall British scheme. The Admiralty, and British authorities generally, were not enthused at the prospect of Dominions developing independent analysis capabilities and thus drawing divergent conclusions from the collected intelligence. Their preference was to retain such capabilities solely under their direct control. Notwithstanding these shortcomings, the imperial connection was to prove beneficial to all parties during the course of the war.

Notes

1. Usually only those of English or European stock were allowed to enlist.
2. National Archives of Australia MP1587, Item 311J, Report of Penang Naval Conference March 1921, 11 April 1921.
3. William F Clarke, 'Government Code and Cypher School: its Foundation and Development with Special Reference to its Naval Side', *Cryptologia*, vol. 11, no. 4, October 1987, p. 221.
4. National Archives of Australia MP1185/8, Item 2021/5/529, Y, W/T and D/F, undated notes c. 1940-41. Though unsigned this document is on Admiralty embossed paper.
5. National Archives of Australia MP1185/8, Item 2021/5/529, Notes on Captain Wylie's Visit, Minute by DNI, 10 January 1941.
6. AJ Marder, *Old Friends, New Enemies: the Royal Navy and the Japanese Navy – Strategic Illusions 1936-1941,* Oxford University Press, London, 1981, p. 357.
7. J Bryden, *Best Kept Secret: Canadian Secret Intelligence in the Second World War,* Lester Publishing, Ottawa, 1993, p. 128.
8. FH Hinsley, *British Intelligence in the Second World War: its Influence on Strategy and Operations,* Her Majesty's Stationary Office, 1979, p. 52.

9. National Archives of Australia MP1185/8, Item 1937/2/415, Establishment of a Cryptographic Organisation in Australia, DSC Minute, 19 March 1941.

10. National Archives of Australia MP1185/8, Item 1937/2/415, Establishment of a Cryptographic Organisation in Australia.

11. National Archives of Australia MP1185/8, Item 2037/3/29, Admiralty Letter M.01003/40, 1 February 1940.

12. Commonwealth Naval Order 131 of 1912, Return of Men with Knowledge of Foreign Languages.

13. National Archives of Australia MP1049, Item 1997/5/196, Minute by Director Signal Section, 17 June 1921.

14. National Archives of Australia MP1049, Item 1997/5/196, Letter from Australian Naval Representative London, 12 April 1924.

15. The implication in James Rusbridger and Eric Nave, *Betrayal at Pearl Harbor: How Churchill Lured Roosevelt into World War II,* Summit Books, New York, 1991, pp. 30-31; that the Australian Commonwealth Naval Board was unaware of Nave's likely employment is unbelievable, given that it was already using him in a basic cryptographic capacity.

16. National Archives of Australia MP1049, Item 1997/5/196, Admiralty letter M.03049/25, 19 November 1925.

17. National Archives of Australia MP1049, Item 1997/5/196, Admiralty letter M.0145/28, 21 February 1928.

18. National Archives of Australia MP1185, Item 1997/5/305, Letter to Secretary of Admiralty, 26 May 1936.

19. National Archives of Australia A816, Item 43/302/18, Letter from RG Menzies, 11 April 1940; and National Archives of Australia MP1185, Item 1937/2/415, Copy of letter from RG Menzies, 11 April 1940. This carries the annotation 'We are not proud of this'. The author appears to be Commander RBM Long, RAN, Director of Naval Intelligence.

20. National Archives of Australia A816, Item 43/302/18, Letter from Lord Cranbourne, 15 October 1940.

21. National Archives of Australia MP1185, Item 2021/5/529, Y, W/T and D/F.

22. National Archives of Australia MP1185/8, Item 2002/2/260, W/T Procedure Y – Personnel, Minute by DSC, 26 March 1941.

23. National Archives of Australia MP1185/8, Item 2002/2/260, W/T Procedure Y – Personnel.

24. Bryden, *Best Kept Secret*, p. 8.

25. The National Archives (TNA) HW3/1, Item 80, DNI London message, 13 February 1939.

26. TNA HW14/2, Minute DNI to Captain on Staff HMS *Terror*, 3 November 1939.

27. National Archives of Australia MP1074/7, Item 4169358, 12/11/1940 to 26/12/1940: SO(I) Wellington 0458Z, 15 November 1940.

28. Royal New Zealand Navy and Naval Facilities in New Zealand, paper dated 30 April 1944, p. 25, copy held by the Sea Power Centre - Australia.

29. New Zealand National Archives (NZNA) N Series 1, 030/33/18, *Suva W/T Station: Report No 1,* 12 June 1941.

30. NZNA N Series 1, 030/33/18, *Additional Y Receiving Position at Suva,* Charge Hand Fiji High-Frequency/Direction-Finding Station Minute, 24 June 1941.

31. NZNA N Series 1, Letter to Resident Naval Officer, Suva, 13 August 1941.

32. TNA ADM223/496, NA030/68/2, *Additional Y Receiving Position at Suva,* Secretary New Zealand Naval Board letter, 15 October 1941.

33. TNA HW14/3, Government Code and Cipher School WWII policy paper, 1940.

35. Commander Twining was a member of the Mauritius Colonial Service and on the outbreak of war became the Island's Chief Censor and Information Officer. It was in his role as censor that he established the monitoring service with a view to monitoring French colonial traffic.

4 Tribal Class Destroyers in Commonwealth Service

Ian Pfennigwerth

By the 1920s, the design of destroyers for the Royal Navy (RN) had essentially stabilised around proven principles – they were smallish, sturdy ships with good sea keeping capabilities and a modest range, adequately armed with surface weapons and torpedoes, and with a relatively fast speed. The genre also had the advantages of being of relatively simple design that made them easy and cheap to construct, useful qualities when they were regarded as 'expendable'. However, by the 1930s some British rethinking of the characteristics of an 'ideal' destroyer was prompted by the appearance of newer and bigger models in the orders of battle of other navies. These were not only larger in size, with enhanced range and seakeeping qualities, but they were able to mount more and larger guns. As well, other navies were showing interest in improved anti-aircraft defence, something that had been neglected in contemporary British destroyers.

The British Admiralty was an interested bystander to these developments, many examples of which were being built in Britain for other navies. Both Thorneycroft and Yarrow had designed and built 'super destroyers' for Dutch, Yugoslav and Polish clients, and the French had produced their own super destroyer class.[1] Since these were regarded as 'friendly' navies it was not until the details and performance of the Japanese *Fubuki* class became known that the Admiralty took serious notice of this trend.[2] That class mounted six 5-inch guns and nine 'Long Lance' torpedoes in a 1750-ton displacement hull capable of 35 knots.[3]

The reason for building larger destroyers (with a heavy gun armament at the expense of torpedoes) was to match the gun power of the larger destroyers being built by foreign powers, especially the 23 Japanese destroyers of the *Fubuki* class.[4]

Finally, in 1934 the Admiralty took the decision that a new class of 'V Leaders' – larger ships to act as the leader of flotillas of other destroyers - should be constructed. The principal characteristics were to be a displacement of 1850 tons – within the extant naval arms limitation treaty limits, ten 4.7-inch guns in twin mountings, torpedo tubes, good communication and plotting arrangements, a top speed of 36 knots and a range of about 5500nm at 15 knots. The main armament was to be able to be elevated to 40 degrees, so that it could be used against aircraft, a good short range anti-aircraft outfit was to be provided, the ship was to carry Asdic (sonar), and a communications direction finding set was to be fitted. This design seemed to cover all the foreseen roles of destroyer leaders into the next decade, which were spelled out as:

Patrol work, shadowing, screening, close support of destroyer flotillas and, in conjunction with cruisers, reconnaissance and escort duties. It is further required, though not as a primary function, that the V leader be able to contribute to the [anti-aircraft] defence of the Fleet, convoys and harbours.[5]

By March 1935, the Director of Naval Construction had prepared five variants of the design for the new ships, of which two – one with five 4.7-inch mountings and another with four - went forward for Admiralty Board consideration. The desire for better anti-aircraft protection won the day, and the fifth mounting was deleted in favour of additional short range weapons. The final agreed configuration was four twin 4.7-inch so-called 'high altitude' (40 degree elevation) mountings in the A, B, X and Y positions, with one quadruple 2-pound pompom mounting forward of the mainmast. Two quadruple 0.5-inch machine gun mountings were sited between the funnels. A quadruple launcher for Mk IX torpedoes was carried on the upper deck abaft the after funnel; the deletion of a fifth tube was to allow for the additional as-built weight of the 4.7-inch mountings over their design weight.

The ships were to be fitted with a retractable Asdic dome at the bow. Depth charge throwers were mounted on the superstructure on either side of the mainmast and two depth charge racks at the stern completed the ships' armament. Size, displacement, speed and fuel consumption requirements dictated, to a major extent, the amount of ammunition that could be carried for these weapons. The designed capacity of the main armament magazines was 2400 rounds and anti-aircraft capacity was 14,400 rounds of 2-pounder and 10,000 rounds of 0.5-inch ammunition. Thirty depth charges could be carried, but there were no reloads for the torpedo tubes. Experience in wartime operations was to demonstrate deficiencies in these capacities, particularly in anti-aircraft, nor did the fire control system match the threat that was to materialise. As one author expressed it:

The system worked quite well provided the ship remained steady, the target aircraft flew straight and level, the guns did not have to fire at more than 40° elevation, and that the attacks did not total more than five minutes, otherwise all the [anti-aircraft] ammunition would have been used up.[6]

Unfortunately, the enemy was singularly unobliging in meeting these parameters and British anti-aircraft weapons were as singularly unsuccessful in destroying aircraft.

All this weaponry and the 190 men to man it, keep the machinery running and feed and administer the ship and her company were to be borne in a hull 377 feet long, with a maximum beam of 36.5 feet and a maximum draft of 9 feet. The displacement came in neatly at 1854 tons. The ship was to be propelled by the steam from three Admiralty three-drum boilers operating at 300psi and the turbines would convert

this to 44,000 shaft horsepower, which would drive her at 36 knots flat out. The 540 tons of furnace fuel oil carried would enable her to steam 5700nm to endurance at 20 knots, but her range would diminish rapidly if higher speeds were maintained. The concept of unitised engineering plant was not proceeded with, nor was a single funnel. Both would have been more expensive but better for the ship in terms of damage control and in creating fewer restrictions on fire direction.

Overall, the Admiralty naval staff got a very impressive ship which met or exceeded all their requirements. Not only that, but in a marked departure from some British ship designs of the period, the designer 'had in mind the desirability of having a good-looking ship in the hope that the officers and men would be proud of her appearance'. Most would agree that he met this criterion admirably. The new commanding officer of a RAN Tribal was moved to record his, perhaps not totally unbiased, view:

> Over and above the material facts shone out the appearance of the ship. Whichever way you looked at a Tribal Class destroyer, she was not just handsome – she was beautiful. The balance between hull and superstructure and the proportions of her two funnels were perfect. Add to this the strong clipper bow with a graceful sheer, running back to the break of the fo'c'sle, and you have a word picture that does not do justice to the actuality of the best looking destroyers ever built.[7]

Finally, the design price estimate had been around £340,000, but in practice this was exceeded by a wide margin of around 50 per cent, with most of the ships being delivered at around £515, 000. However, that would not be discovered until the contracts for building the ships were put out to tender: there is nothing new in defence acquisition cost blowouts! The 1935 Naval Estimates had funding for seven ships and tenders for this first batch were let on 10 March 1936. The orders for the second batch of nine, part of the 1936 estimates, were placed in June the same year. Seven yards were involved - Vickers-Armstrong Tyne, William Denny at Dumbarton, Fairfield and Alexander Stephen, both at Govan, Scotts Greenock, Swan Hunter at Wallsend and Thornycroft in Southampton. The first ship of the class to be delivered was HMS *Afridi*, launched by Vickers in June 1937 and commissioned on 3 May 1938. As first of class, she was subjected to the full range of acceptance trials and, when all the ships had been delivered, the British Tribal project was virtually complete.

Wartime experience showed some defects in the design and armament of the Tribals. They were not the more stable gun platforms that their boosters had predicted, and the deficiencies in the anti-aircraft armament became very evident once the *Luftwaffe's* Stukas entered the picture. Moreover, there appeared to be a weakness in the structure of the forward part of the ship, especially around the break in the forecastle, with cracking frequent and damage from operations in rough weather routinely requiring dockyard repairs. Perhaps the ships were pushed too hard, but

the fact remains that repairs for damages caused by adverse weather was a regular feature in ships of the class until remedial action was taken. A former RN Tribal sailor recalled that:

> They were good ships alright, but it was the men that mattered. You don't know what it was like, with the cold and the wet and all. Sometimes, every time you jumped out of your hammock you'd land in water up to your knees. You were cold and wet and tired and hungry and scared and sick. You were always being thrown about. Sometimes you couldn't stand upright for weeks on end. It was awful.[8]

Without seeking to launch any controversial discussion or arcane naval architecture debate over the merits of various ship construction schools of thought, the cracking problem could have been in the adoption of the longitudinal framing as opposed to the more commonly used transverse framing method. The designers also expected the shell plating to provide more support for the frames structure than was normal, hence the requirement for special, high-tensile steel. Tank testing had shown that the worst speeds for pounding and shipping water over the bow for Tribals was between 20 and 25 knots, which was very probably the speed at which they were required to operate for much of the time.[9] From late 1940, the hulls of surviving RN ships were stiffened, and these alterations were built into the Australian and Canadian built ships.

The failure of the ships' anti-aircraft weaponry led to 'X' 4.7-inch mounting being replaced with a twin 4-inch mount, commencing in the latter half of 1940, and the fitting of 20mm Oerlikon guns on the bridge superstructure. Other changes included the lopping of 1.3m from the after funnel to provide better A arcs for the anti-aircraft weapons, the replacement of the tripod foremast with a lattice mast and the fitting of 'goalposts' in place of the original mainmast. Underwater, the bilge keels were enhanced to improve the ship's stability.

Australian interest in the Tribal class arose out of a process of tedious dickering over the replacement of the World War I (WWI) vintage light cruiser HMAS *Brisbane*. The financially challenged Australian Government was interested in finding ways to escape from its commitment to maintain the cruiser as part of the Empire total allowed under naval arms limitations treaties, which had been negotiated by the British. The Admiralty – and the Australian Commonwealth Naval Board – were equally keen that this should not happen. The politicians called for options for ships to be constructed in Australia; the Admiralty suggested sloops, while conceding that these would not replace a cruiser. Australia's naval board used its back-channel with the Admiralty to promote a better option and for the first time, Tribal class destroyers were mentioned. The naval board was excited at the prospect, the government less so. The Minister for External Affairs suspected, correctly, that collusion between the Admiralty and naval board was dictating the flow of the discussion, and had the Chief of Naval Staff sent to London with extremely narrow riding instructions to find

a solution.[10] What actually happened was that Australia wound up buying all three modified *Leander* class light cruisers from the RN and committed itself to building both sloops and Tribals, but to tell how that all came about is a long story and not part of this discussion.

One Australian yard, Cockatoo Island Dockyard in Sydney, had the capacity to build destroyers, having assembled *Brisbane* and then constructed her sister HMAS *Adelaide*; albeit at such a leisurely pace that she was christened 'Ever delayed'. Nevertheless, the capacity, skill and managerial ability were all present, as were the steel mills and boiler shops. Cockatoo Island had also enjoyed a long association with Vickers, and many of its skilled workers had been trained at Barrow-in-Furness before coming to Australia. In 1937, Vickers took a small financial stake in the company and in 1938 gained a seat on the board.[11] All this was very advantageous to Cockatoo Island, as it eased the exchange of information, particularly drawings, required to build the destroyers. At that time, Admiralty practice was for the builders to do most of the detailed design, and hence to produce their own drawings.

Cockatoo Island was not immune from a general shortage of skilled labour in Australia at the time, or from the union militancy that dogged shipbuilding and other industrial activities throughout the war. However, it did have the experience and skills to construct the major parts of a Tribal class destroyer, except the armament and some of the auxiliary machinery and sensors. These had to come from Britain, and delays in delivery did impact upon the commissioning of these ships. Nevertheless, the government was keen to start, and in December 1938 invited Cockatoo Island to tender for the work of building two destroyers, advising as well that preliminary work was authorised in advance of the tender being accepted.

The company's tender was submitted on 10 July 1939, on a fixed price incentive basis, with a maximum price of £A720,000 each. The order was placed on 6 October 1939, and the first ship, HMAS *Arunta* was laid down on No.1 slipway on 15 November 1939. The keel of HMAS *Warramunga* was laid on the new No.2 slipway on 10 February 1940, the day HMAS *Warrego* (the final sloop order of four) was launched by Pattie Menzies, wife of the prime minister.[12]

The names chosen for the two ships, and a third ordered in February 1940, were those of Australian aboriginal tribes, in keeping with the tribal theme adopted by the British, and the same convention was later followed by the Royal Canadian Navy (RCN) in naming their ships. There was, however, to be a departure from the convention for the third Australian Tribal, to be recounted later.

On 30 November 1940, Zara Hore-Ruthven, wife of the Australian Governor-General, launched *Arunta*. It was a day of filthy weather and the official party had been delayed in getting to the Island until well past the high tide. The new hull slid obediently down the slipway and then stopped, to much embarrassment, having missed the tide. However, she finally entered the water the following day, without damage. Given her subsequent career, this hitch in her launch certainly brought

no bad omen with it. Her fitting out was delayed by the late arrival of some British equipment but she finally commissioned on 30 April 1942. Sister *Warramunga* commissioned on 22 December 1942. These ships had the new standard armament of three twin 4.7-inch mounts in A, B, and Y positions and a twin 4-inch mount in X position. Depth charge throwers, 2-pounder pompom mounts, 20mm Oerlikons and torpedo tubes completed their weapons suites. On trials, *Arunta* recorded a speed of 35 knots but her sister registered 36.65 knots; *Warramunga*, even now, remains the fastest monohull ship the RAN has ever owned – at light displacement.

Canada's entry into the exclusive club of Tribal owners was even more dramatic than that of the RAN. Although Canada had been represented at the 1909 Imperial Conference, which finally gave the go ahead for the Dominions to have their own navies, the Fleet Unit concept was not adopted to build a Canadian navy. While Australia had operated a battle cruiser and light cruisers, together with destroyers and submarines during WWI, and was now the possessor of two heavy and four light cruisers plus an expanding number of destroyers and smaller escorts, the RCN had played little part in the first war and had been reduced almost to invisibility after that conflict ended. The reasons for this disparity are complex but include the Quebec factor in any discussion on Canada's contribution to imperial defence, the fact that Ottawa is a long way from the sea, that the threat was thought to be limited to the North Sea, and that relatively few Canadians have much to do with maritime affairs. However, the upshot was that Canadians had no warm glow of reminiscences of the Great War at sea. They had no recall of the expulsion of the Germans from New Guinea under the guns of the Australian Fleet, no pride in owning the first Empire warship to penetrate the Dardanelles, no image of a Sopwith Pup lurching off the forward turret of an Australian light cruiser in a world's first, no recollection of their battle cruiser (HMAS *Australia*) leading a column of German warships into Scapa Flow to surrender. Further, Canadian housewives did not make their scones, cakes and biscuits from flour from of a packet on which the image of the nation's favourite cruiser was displayed – HMAS *Sydney* choice flour in every home!

By 1938, two old destroyers were the main element of the RCN order of battle, but the Canadian Chief of Naval Staff, Vice Admiral Percy Nelles, was intent on changing that situation as soon as possible. It is said that when he saw a photograph of the Tribals he exclaimed, 'I want those for my Navy!'[13] This was, as things turned out, a lot easier said than done. The Canadian Government was extremely concerned that Canadians should not be drawn into fighting in Europe as they had been in 1914, and was intent on retaining control over its forces, including the RCN, rather than seeing them pass into the hands of the British. Acquiring or building ships that would be attractive to the British as reinforcements for their own forces around the British Isles was to be avoided, if possible. However, at the time the main threat to Canadian sovereignty and trade was seen to be the commerce raider, a prediction which proved correct - as far as it went.

Half again as big as the RCN's existing destroyers and mounting a gun armament fully twice as heavy, the new ships were virtually light cruisers that would stand a fighting chance against any but the heaviest Axis raiders. They also carried anti-submarine weapons, Canada's other main requirement, and yet were considerably smaller and cheaper than full fledged cruisers. Unlike cruisers, moreover, there was a realistic possibility that construction of Tribals might be within the capacity of Canadian yards.[14]

A serious brake on any Canadian Tribals program was the inability of Canadian yards to undertake any construction of significantly complex ships and the extremely small base of skilled workers on which to develop the necessary labour and skills. This became moot when the British asked for and got Canadian commitments to construct and operate a range of smaller and simpler anti-submarine escort ships for North Atlantic convoy protection. The program absorbed the available labour and demanded extreme measures to train more, and tied up the limited Canadian shipbuilding capabilities. One consideration which did not have to enter into Australian or British ship construction planning was the fact that many of the best-equipped Canadian shipyards were situated on the Saint Lawrence River, which ices over in winter.

Nelles was clearly undeterred. His concern, and that of his senior staff, was that if the RCN was to end the second conflict with a fleet of low technology, low cost corvettes and the like it would be condemned to the same near-death experience that had followed the first war. The possession of substantial modern fighting ships in the RCN order of battle would, they believed, stay the government's hand because it would have 'involved too much investment in time and money to be scrapped easily', especially if the Canadian navy had gained for itself a reputation for effectiveness and gallantry, and had demonstrated its utility as a fighting service in defending Canadian interests. Leaping ahead and out of this story for a moment, by the end of the war the RCN had got itself involved in not just big destroyers, but cruisers and aircraft carriers as well although, unfortunately, except for the destroyers, without much of the glory that had been hoped for.

But in January 1939, the Chief of Naval Staff had the Canadian Government on side and had persuaded the politicians to fund new construction to build up the RCN to a force of 18 destroyers, 8 anti-submarine vessels, 8 motor torpedo boats and 2 'parent' vessels. This force included two Tribal class. By late 1939, Nelles had added 46 additional anti-submarine warfare (ASW) escorts to the bill. How to actually produce, equip and crew all these ships became a major problem for the Canadian navy, government and industry, but to Nelles must go the credit for steering this ambitious program past the rocks and shoals of Canadian political and fiscal realities, a significant achievement with ramification for both the wartime and post-war RCN.[15]

The Admiralty was keen to get its hands on any ships the Canadians might construct, and would certainly welcome some more Tribals. The class had been fully involved in the various aspects of the war, with some successes and some losses. Even before hostilities began, three of the ships had been involved in the search for and rescue of survivors from the sunken submarine HMS *Thetis*. When the war broke out, they had been deployed, largely with the Home Fleet, and engaged in convoy escort, searches for German raiders and blockade-runners, and sweeps trying to locate German capital ships. HMS *Somali* was the first British ship to seize a prize in World War II (WWII), while in February HMS *Gurkha* sank a German submarine. Germans were not the only quarry. In June 1940, HM Ships *Tartar* and *Mashona* 'seized control of' two Swedish destroyers, which were later released. The Tribals were fully engaged in the operations in Norway during which *Gurkha* and *Afridi* were lost to bombing – the first British warships sunk by aircraft – and HM Ships *Punjabi* and *Eskimo* were damaged, the latter having her bows blown off back to B turret. Norway was also the scene of one of the most famous incidents of the war when in February 1940, HMS *Cossack* rescued Allied prisoners from the German supply ship *Altmark* by boarding in the Hornblower tradition.

The class later took part in the operationally important tracking down and destruction of German weather ships, and the seizure of their code and cipher machines. *Tartar* caught two in March and June 1941, and *Somali* captured another in May, with HMS *Bedouin* and a repaired *Eskimo* in company. HMS *Matabele* and *Punjabi* caught and sank another in October. The captured Enigma machines and settings were priceless in the war against the *Kreigsmarine* for the codebreakers. *Punjabi* was involved in the evacuation of British, French and Polish forces from France in August 1940, and in the attack on Dakar. However, *Mashona* was lost to German aircraft off Ireland while returning from the hunt for and destruction of the German battleship *Bismarck*, an operation in which no fewer than six Tribals took part. In October 1941, *Cossack* was sunk by a German submarine while on convoy duties near Gibraltar.

The Tribals were also fully involved in operations in the Mediterranean where several were lost, but not before extracting a price. HMS *Nubian* took part in the British victories over the Italians at Calabria in July 1940 and at Matapan in March 1941. She was fully involved in the reinforcement of and then withdrawal from Greece and Crete, and in the latter operation lost her stern to a German bomb. She was saved and repaired to fight another day. HMS *Mohawk* was in the Calabria and Matapan operations but was torpedoed by an Italian submarine in April 1941. Four Tribals were involved in earlier Malta relief operations and in December 1941, HM Ships *Sikh*, *Maori*, and two other destroyers, including HMAS *Quickmatch*, sank two light Italian cruisers in what became know as the Battle of Cape Bon.

However, to Canadian requests for skilled technical and managerial workers, and the infrastructure necessary for the Tribal project, the British had no answer. Their own shipbuilding demands had absorbed all the talent they could muster.[16] Prime

Minister Churchill even suggested to his Canadian counterpart that the RCN would be better off to select American designs, and this was indeed examined by a technical mission. Its conclusion was that the concept was both practical and advisable, although the American contemporary destroyer design, the *Fletcher* class, had yet to enter the water and was thus unproven. The Tribal was also seen to be cheaper and simpler to build. Nelles once more came down on the side of the Tribal, essentially on the grounds of commonality with the British, an important consideration.[17] But his experts also advised him that the destroyers could not be built in Canada within an acceptable timeframe. Nelles went back again to the Admiralty – could the first flight of Canadian Tribals be built in Britain, with the *quid pro quo* that they would be assigned to the British for operations? The Canadians, for their part, would build corvettes and frigates for the Admiralty. Nelles had a deal – ten corvettes for one Tribal, and that is how the first four RCN Tribals – HMC Ships *Iroquois*, *Athabaskan*, *Huron* and *Haida* were built by Vickers in Newcastle-on-Tyne. Orders were placed in 1940; *Iroquois* was laid down in September 1941 and commissioned on the last day of November 1942.[18] During their construction, the Canadian Tribals benefitted from the experience of their British predecessors, and their hulls were stiffened, radar was fitted and improved fire control systems were installed.[19] The other three followed in February, July and August 1943. Although the RCN was the last and junior member of the Tribal club, its ships would serve much longer than in either of the other two navies.

Moreover, the contract with Vickers led to the promise of technical and personnel assistance with a homegrown Canadian construction program. In June 1941, orders for two Tribals were placed with a Halifax shipyard, with a second pair ordered in early 1943. The decision was, in great part, a political one, and the difficulties in gearing up this yard and keeping the pressure on it to advance the Tribals' construction consumed a great deal of financial and staff effort. The program was delayed almost from its inception; the first two keels were not laid until May 1942, and the first hull was launched in September 1943. Even when launched there were delays in providing the propulsion plant for the ships. It soon became apparent that delivery of the first flight of two would not occur until 1945 and the last of the four on order would not be commissioned until 1948! [20] These two ships featured a Canadian variation which was to be applied to all future ships of the class, the replacement of the 4.7-inch mountings with 4-inch. This had the disadvantage of reducing the ship's range and hitting power, but it did standardise the ammunition to be carried and the maintenance and spares issues.

While these ships were under construction in Britain and Canada, the RN Tribals continued to bear the hurts of the battle. *Maori* was sunk at her moorings in Valletta Harbour, Malta, by German aircraft in February 1942. *Matabele* was sunk with the loss of all but two of her crew by a German submarine on a convoy run to Murmansk in January 1942, and *Punjabi* was cut in two by the battleship HMS *King George V* during another Arctic convoy operation that May. *Bedouin* was lost during another

Malta resupply attempt in June after having been damaged in a night engagement with Italian cruisers. *Tartar* joined the escort force for the successful Operation PEDESTAL to relieve Malta in August. September 1942 was bad month for the Tribals. A raid on Tobruk cost the RN *Sikh*, hit and destroyed by shore batteries with the loss of half her crew and HMS *Zulu*, with *Sikh* survivors onboard, sunk the next day by Italian aircraft. *Somali* was torpedoed in the Arctic and sank while under tow by *Tartar*. Only 4 of the 16 ships remained, but they would all survive the war and continue in its prosecution.

On the other side of the world, the RAN Tribals were also making their mark. *Arunta* was employed in protecting the vital Australian east coast convoys carrying raw materials, troops and supplies to the north in preparation for the coming assault on Papua and New Guinea, in the process of which she sank a Japanese submarine in August 1942 during the defence of Milne Bay. In October, she was engaged in operations to clear nearby Goodenough Island of Japanese. *Warramunga* joined her shortly afterwards in the joint RAN-US Navy Task Force (TF) 44 under Australian command. Then in January 1943, *Arunta* made a successful evacuation of the guerrillas of Lancer Force from the island of Timor.

While the battle to eject the Japanese from the territories they had overrun was about to begin in the Pacific, the battle with the Germans was well on its way to being won in the Atlantic and in the Mediterranean. The British Tribals were assigned to Operation TORCH, the landings in North Africa in October 1942 and then entered the Mediterranean as a screen to prevent the escape of Axis forces back to Europe in early 1943. *Tartar, Nubian* and *Eskimo* took part in the invasion of Sicily and HMS *Ashanti* joined them for the Allied landings at Salerno. For a change of scenery, in December, *Ashanti* with the Canadian *Athabaskan* were escorts for the Arctic convoy that lured the German battleship *Scharnhorst* out to her destruction off North Cape. *Athabaskan* had been damaged in August by the new German glide bombs in the Bay of Biscay and had spent three months under repair. Her newly-commissioned sisters, *Haida* and *Huron*, were also assigned to the Arctic convoy task, rather than to Atlantic convoys, as this was where their heavier gun power was most likely to be needed against the threat of German surface units. [21]

1943 was a year of intense activity for the Australian Tribals of TF 44 (TF 74 from May 1943), culminating in the assault on Cape Gloucester in New Britain on Boxing Day. In the interim, they had supported operations in the Solomon Islands and continued their convoy escort work, as well as covering the unopposed landings on Kiriwina and Woodlark islands to the east of Papua in July. In October, the TF moved forward to Milne Bay in Papua and the destroyers engaged in a series of attacks on targets in western New Britain: they were at last firing their guns in anger. After providing night cover for the operations area, in January 1944 *Arunta* and *Warramunga* provided naval gunfire support for the assault on Saidor in New Guinea.

Thus as 1943 ended there were ten Tribals at sea in the Atlantic and the Pacific, and five being built - four in Canada and one in Australia. The original RAN plan for eight Tribals had been quietly shelved and shipbuilding effort was being devoted to modifications and repairs of battle damage, the assembly of the vast numbers of landing craft that would be required by General MacArthur, and the construction of a force of 24 anti-submarine wafare frigates. Progress on the third RAN Tribal, now named HMAS *Bataan* in honour of the heroic stand of MacArthur's forces in the Philippines, slowed. She was launched at Cockatoo in January 1944, but not commissioned until May 1945. The RCN had decided that the last two of its Tribals under construction would incorporate modifications to weapons and sensors similar to those of the new British V and W class, although the 6 x 4-inch gun configuration would be retained. These ships also benefitted from a visit to Halifax by HMCS *Iroquois*, which had a history of storm-induced damage, during which the possibilities for modifying the Canadian build to obviate these issues could be assessed.[22]

1944 saw a surge of activity in all theatres of war, with the combined chiefs of staff in Washington endorsing the two-pronged plan of assault on the Japanese empire through the Central and Southwest Pacific and the Allies completing their preparations for Operation OVERLORD. For the Tribals of the Home Fleet, this involved a series of operations directed at eliminating German surface and submarine opposition, including sweeps by destroyers backed by light cruisers along the French coast. These generated a number of spirited encounters, in which the British generally came off best, but German resistance was determined and, on occasion, effective. At the end of April, *Athabaskan* was stuck in the stern by a torpedo from a German destroyer being engaged and subsequently suffered a secondary explosion which sealed her fate. *Haida* could rescue only 42 survivors before she had to manoeuvre clear, and another 80-odd became prisoners of war. During the invasion itself, six Tribals were involved, sinking a number of German ships. *Haida* and *Eskimo* accounted for a U-boat to add to the score. After that, there was little substantive employment for the Tribals in Europe, except for the endless escorting task.

In the South-West Pacific TF 74 was involved in all of MacArthur's relentless 'leapfrog' assaults along the coast of New Guinea and offshore islands. Madang and Finschhafen were attacked in late January and then in February and March the destroyers were in the thick of MacArthur's hazardous 'reconnaissance in force' of the Admiralty Islands where, had it not been for their gunfire, his forces would almost certainly have been overwhelmed by the Japanese. The following month *Arunta* and *Warramunga* were at the landings at Tanamerah Bay for the capture of Hollandia. The pace did not slacken: Wakde Island was assaulted on 17 May 1944 and the larger Biak ten days later.

These operations imposed somewhat different conditions on the Australian Tribals than the Admiralty designers had in mind. The ships were operating away from major bases and repair facilities for more than two months at a time, refuelling and replenishing at sea until forward bases could be established in recaptured territory. As the Commanding Officer of *Arunta* reported in December 1943:

> By the end of the month the Ship's Company had been aboard continuously for 60 days. Conditions are not easy, but there is no drop in keenness or efficiency. I attribute this to the quality of the men themselves, and to the fact that the ship has been taking an active part in offensive operations.[23]

The ships and their companies were also operating in weather conditions not contemplated by the designers. It was hot and steamy on deck, and even worse below with the ship closed up at Action Stations. A member of *Warramunga*'s crew remarked:

> These destroyers were not built for tropical conditions and with all 'X' and 'Y' openings [doors and hatches crucial to the ship's watertight integrity] shut, the conditions below deck were similar to a Turkish bath. All the crew were in bomb blast clothing, which meant that long trousers and long sleeved shirts had to be worn. In addition to this, everyone had to wear his 'Mae West' [kapok lifejacket], and guns crews had to wear anti-flash gear which covered the complete head, face and hands.[24]

The assault on Biak provoked the Japanese Combined Fleet into motion; the super-battleships IJ Ships *Yamato* and *Musashi* were ordered to steam to the aid of the Japanese garrison while additional land forces were to be landed by cruisers and destroyers. It was just as well that the US 5th Fleet operation against the Marianas diverted the main forces to the central Pacific, because MacArthur and the 7th Fleet had nothing to contest it with, except TF 74. The destroyers were employed in challenging the landing attempt, but the Japanese ships fled. After a short break in June, the destroyers were back on the coast of New Guinea in July aiding the US 6th Army in defending its positions at Aitape against a Japanese counter-assault.

After Biak and three other relatively minor landings, in Morotai in September MacArthur announced that the next would be at Leyte Gulf in the Philippines – in four weeks. Resistance was expected to be determined and *Warramunga*, in Sydney for a short refit period, was fitted with 40mm Bofors guns in preparation. The actual landing went well and enemy reaction was light, but on 21 October 1944, the crash of a Japanese aircraft into HMAS *Australia* (II) revealed a new Japanese weapon, the Kamikaze. While there was never an entirely satisfactory counter to this, blasting the aircraft to pieces was found to be the only sure way to deflect it. Bofors guns sprouted on ships like mushrooms after rain.

The Japanese naval response to Leyte was an elaborate plan involving deception and an attack on the landing force through two straits diverging into the Philippines Sea. The Australian ships were deployed with the force countering the threat from Surigao Strait and it was there on 25 October that *Arunta* led a column of Allied destroyers against the Japanese battleships in the last ever battle line action.

Leyte was followed by the assault on Lingayen Gulf on Luzon in early January 1945. Both Australian Tribals were engaged and *Arunta* was hit by a Kamikaze although fortunately with repairable damage and light casualties. The destroyers supported the amphibious assaults and helped to fight off the incessant and determined Kamikaze attacks which left few undamaged ships in the Allied force. This was the peak demonstration of their designed role in 'contributing to the anti-aircraft defence of the Fleet'.

Meanwhile, *Eskimo*, *Nubian* and *Tartar* were given minor refits to 'tropicalise' them – as if one could – and despatched to join the British Eastern Fleet, then engaged in supporting operations in Burma and raids on Japanese positions in Sumatra. There they were involved in operations similar to the RAN Tribals, including the last surface actions of the war for the RN. The RCN Tribals remained on Arctic convoy duties until the German surrender in May. *Iroquois* was part of the force to escort surrendered German cruisers into Kiel – a mini-HMAS *Australia* (I) moment 27 years after the first. Then they too were sent home for tropicalisation in preparation for Pacific service.

Right at the end of the war the RAN Tribals were engaged in supporting the landings at Wewak in May and in Borneo in May and June, and in July TF 74 was gathered in Subic Bay to prepare for the assault on the Japanese home islands planned for October. Here *Bataan* joined and *Arunta* went south for refit, thus missing the opportunity of witnessing the official Japanese surrender ceremony in Tokyo Bay. Even so, there were three Tribals present – *Nubian*, *Warramunga* and *Bataan*, one a veteran of all the fighting with 13 battle honours to her credit, and another yet to fire her first shot in anger. They had commissioned six and a half years apart at the opposite ends of the earth.

With the shooting now stopped, but not the work of the navies in restoring and policing the peace, it was possible to sit back and discuss whether the Tribals had proven to be an effective design for the three Commonwealth navies in which they had served. For the British, there was no question that they had played their part fully and actively in operations. They had been effective escorts and scouts, they had engaged enemy surface forces with generally superior results, and they had sunk submarines. Within the limitations of the systems with which they were fitted, they had contributed to anti-aircraft defence, and their capabilities had been progressively upgraded. They were no more or less vulnerable to air attack than any British warship. Design flaws had been revealed by operational service and

fixes had been applied. But the survivors were old and worn out and, in any case, newer designs were available to do the work now required of the RN. All four British Tribals were initially paid off into reserve and then scrapped.

For the Australians, while *Arunta* and *Warramunga* had acquitted themselves with great distinction and had gained many plaudits for their contributions to 7th Fleet operations, there were some question marks over them – which might have been a factor in the lack of priority given to the completion of *Bataan*. Their relatively 'short legs' was an issue in an operating area distinguished by its vastness and long distances between replenishment points. Second, the ships were uncomfortable in tropical operations. However, the third point is the most telling. Having carried out his inspection of the two ships in October 1944, a tradition maintained even though there was a world war going on, Commodore John Collins, RAN, commanding the Australian Squadron made the following remarks:

> In the General Section of my report on both ships I have stated that they are efficient fighting units. This statement is made with the reservation, not promulgated to the ships concerned, that this applies within the limits of their design. It is a hard fact that the 'tribals' show up badly against U.S. 2100 ton destroyers [*Fletcher* class], particularly observing the latters' ability efficiently to engage aircraft targets with their 5-inch guns in both direct and blind fire.[25]

This was, of course, an observation made after the fact. The prospect of the RAN adopting a US destroyer design in 1939 was extremely remote and was never even considered. However, the reduction of the planned total from eight to three, even given wartime pressures on the capacities of Australian yards, reflects at least a degree of rethinking about the value of the Tribals to the RAN. The Australians had successfully operated both the N and Q class destroyers during the war, so there was a range of British designs against which the evaluation of the Tribals could be made, quite apart from what the US Navy was fielding. The RAN would keep its three ships, but only until something better replaced them. In the meantime, service in the British Commonwealth Occupation Force in Japan would provide plenty of employment for them. *Arunta* and *Warramunga* both served two tours in this role.[26]

In Ottawa, an objective evaluation of the Tribals was more difficult. Nelles and his successor had demanded Tribals from the Admiralty and from their own government, and had got them. They could hardly now suggest that these were not the ships they had really wanted. Moreover, there were four more in the process of being delivered, at a slow rate, to the RCN. A Canadian capability thought impossible in 1941 had actually been developed and was delivering a product to Canadian specifications; in that sense, the Tribal class in Canada was at least as important an industrial project as it was a ship design. The project had its critics who, probably correctly, pointed to the diversion of scarce manpower and skill resources into the Tribals and away from what was the Canadian navy's principal contribution to the war effort –

oceanic escorts.[27] But it has to be remembered that the RCN top brass needed their high-value ships to preserve the navy after peace had been declared, and they had certainly achieved that.

As for the performance of the ships, the Tribals were the bright sparks in what had been a rather gloomy war for the RCN. They had provided escort protection to important ships and convoys, they had sunk submarines, and they had engaged the enemy very closely off the French coast and, with the exception of the sad loss of *Athabaskan*, had emerged triumphant. That was glory, and the Tribals had won it for Canada; their officers would go on to more senior commands with reputations for having driven Tribals streaming like a banner before them. The defects in design and the inadequacy of the armament and control systems could be glossed over, and had not been a particular problem for the Canadians anyway. Even the fact that the ships might now be regarded as obsolete did not deflect the RCN from its conviction that the effort had been worth the result, and, as events transpired, that was arguably correct. However, the immediate response to the end of the war was to terminate the tropicalisation refits of the surviving British-built Tribals and to place them into reserve.

The strategic directions of the defence policies of both Canada and Australia after WWII were towards collective defence; for Canada this meant membership and obligations under NATO, and the role assigned the RCN was escorting, with a heavy slant towards ASW.[28] Australia worked hard to establish and to gain a key role in British plans for the defence of the Far East, which resulted in 1948 in the ANZAM agreement for the defence of Malaya and Singapore. Based on the intelligence reaching the governments and defence planners, this also involved a heavy commitment for the RAN in ASW. These decisions had clear and immediate impacts on force structure planning for both navies, with ASW frigates assuming a higher priority than the big-gun destroyers, at least in Canada. The RAN had already been committed to an ambitious naval re-equipment program, involving aircraft carriers and two new classes of destroyer, as well as the conversion of Q class destroyers to the fast ASW frigate role.

It soon became very clear to the RAN that its re-equipment program was in serious trouble on two grounds. First, the government's national reconstruction program was draining skilled trades out of shipbuilding and sequestering resources for other purposes. Second, many permanent-service navy personnel were heading in the same direction for better conditions and more pay. The stopgap measures adopted until the new ships could be completed and more men recruited saw ships paid off into reserve and a renewed prominence for the Tribals in future plans

Canada took similar measures, with an upgrading of the ASW capabilities of the Canadian built Tribals to fill the gap until the new *St Laurent* class frigates appeared. The first of these ASW conversions was HMCS *Nootka*, which had commissioned in August 1946 and underwent conversion work in 1949-50, and *Iroquois* emerged

as an ASW destroyer in 1951.[29] HMCS *Micmac*, the first of the Halifax ships, and which served her entire career in the RCN as a training ship, was fully converted in 1952. *Haida* was recommissioned in a training role in 1947, and this was also the function of *Athabaskan*, the last of the Halifax-built Tribals, which commissioned in January 1948. The principal changes to the original designs were the replacement of X mounting with a US 3-inch/50 twin mounting with its own separate fire control system, the removal of depth charges and the replacement of Y mounting with a bomb room, handling gear and two Mk IV 'Squid' ASW mortars.[30] *Haida* completed the major modernisation and ASW conversion program in 1952 before deploying to Korea for the first of two tours. HMCS *Cayuga* and *Huron* followed her in 1952, and *Athabaskan* in 1954.

Thus, when the North Koreans crossed the border into South Korea on 25 June 1950, both navies had at least one Tribal class destroyer, modified or unmodified, available for service with the United Nations (UN). The Australian Government committed both the British Commonwealth Occupation Force duty ships HMAS *Shoalhaven* and *Warramunga*, which sailed from Sydney on 6 August, and commenced operations on 25 August.

The Canadians were quicker off the mark with their Tribals. The RCN's West Coast Command had three ships in commission – two Canadian-built Tribals, *Cayuga* and *Athabaskan* and the V class destroyer HMCS *Sioux*, the two former just emerging from refit or going into it.[31] However, by 5 July all three were ready for deployment and sailed for Korea, calling at Pearl Harbor and Guam before reaching Sasebo in Japan on 30 July.[32] They were soon in action convoying ships from Japanese ports to Korea, and on 15 August, *Cayuga* fired her first shot in anger, and the first Canadian gun of the Korean War.

A principal concern for both the RAN and RCN was logistics support for their ships, which, in large part, had to come from the British, and from a reserve of ammunition and stores built up at the British Commonwealth Occupation Force naval base in Kure. Neither accepted RN food, the Australians supplying their own and the RCN taking US Navy rations.[33] As most of the British ships had 4-inch guns, ammunition supplies for the RCN Tribals were not a problem, but the Australian 4.7s were orphans. One advantage the Canadian Tribals had over the other Commonwealth ships was a superior high-definition surface warning radar, especially useful in spotting the mines which the North Koreans became adept at laying, especially off the west coast.[34]

Neither navy had a great part in General MacArthur's amphibious masterstroke at Inchon, which halted and then drove back the North Koreans. Indeed, at the time, the RCN ships were released for rest and relaxation in Hong Kong in November 1950, and there were plans for them to be sent home.[35] These were rapidly cancelled when the Chinese threw their weight behind the North Koreans later that month, and the pattern of operations for the UN naval forces then settled into a succession of

high value asset protection tasks against a perceived submarine threat – especially the British, American and Australian aircraft carriers. Other tasks included coastal patrol and inspection, harassment of enemy forces, interdiction of enemy transportation, searching for and eliminating mine-laying junks – at which *Nootka* was particularly successful, and guerrilla warfare, especially on the shallow west coast with its myriad of islands. The Canadian ships were also involved in the long-running blockade of Wonsan by the UN forces.

High points for the Tribals were few, except for the evacuation and destruction of Chinnampo ahead of the advancing Chinese in December 1950.[36] The demolition of railway bridges and rolling stock on the east coast, train-busting, became the principal excitement and task for the destroyers' guns, although *Warramunga* had a torrid few weeks off the coast close to the Soviet border engaged in duels with Korean shore batteries at Chongjin in February/March 1952.[37] The RCN Tribals were also used in this role, and in October 1952 off Songjin an enemy shell found its mark on B mounting in *Iroquois*, killing three men and injuring ten others. The ship continued her mission. *Bataan* provided the naval gunfire support and the operational control for a large-scale raid by Korean guerrillas in the Haeju Gulf in May 1952, which demonstrated that the ships could be most effective in these kinds of isolated and localised operations.[38]

All of the Tribals, except *Micmac* served in Korea for at least one tour, with *Athabaskan* claiming the honour of firing the last shot on 20 July 1953.[39] Both *Warramunga* and *Bataan* had served on operations with the UN forces in rotation with the new Battle class destroyers HMA Ships *Anzac* and *Tobruk* with their twin 4.5-inch radar-directed turrets *Arunta* also served in Korea, but only as part of the Patrol Force after the Armistice had been signed.

The Tribals of both navies proved their utility in Korea. Versatile ships with the firepower to take on shore batteries and a draft shallow enough for them to be used in almost every circumstance, they were a valuable addition to the forces of the commanders of naval forces on both east and west coasts. Their fuel consumption was not a problem, given the short distances involved and the availability of afloat support. Indeed the RCN ships set records for underway replenishment never since equalled.[40] They also had ship's companies big enough to be involved in raiding parties in support of Korean guerrilla bands, a sport indulged in particularly by the Canadians.

Arunta had been the first RAN Tribal to undergo a modernisation and ASW conversion similar to the Canadian ships, although the RAN ships retained their 4-inch anti-aircraft mountings. She recommissioned in November 1952. *Warramunga* was converted and modernised in 1952-54, but *Bataan* was not, paying off into reserve in October 1954 and being sold for scrap in May 1958. There were more modern ships of the Daring class to replace her, and her crew was needed to operate them.

That would have seemed to have been the final operational deployment for the Tribal class, except for the Malayan Communist Party. Australia was slow to become involved militarily in the Malayan Emergency but was finally tempted in under the cover of the Far East Strategic Reserve, formed in 1955. The old warhorses *Arunta* and *Warramunga* were the first Australian units on station in June 1955, and were relieved six months later. They had been involved in exercising, patrolling the waters offshore of the Malayan Peninsula, and training with Malayan and Singaporean marine forces, but were not required to fire on enemy positions. *Arunta* finally paid off into reserve in July 1956. Sold for scrap, she sank while under tow to Taiwan in February 1969. *Warramunga* remained in commission, with one more tour in the Far East Strategic Reserve in 1958; while deployed she clocked up her 500,000th mile underway since commissioning. In 1959, she was decommissioned and left Sydney undertow for scrapping in May 1961.

The RCN Tribals steamed on for a few more years, involved in NATO exercises and training tasks generally. *Iroquois* played a role in the deployment undertaken by the RCN in support of the US blockade of Cuba during the October 1962 missile crisis, but for most, their days of excitement were over. In October 1962, *Iroquois* paid off and was scrapped four years later.[41] *Huron* paid off in April 1963 and was broken up two years later. *Micmac* and *Cayuga* went in 1964 and finally *Athabaskan* in April 1966, the last of the tribe to decommission. However, one still survives – *Haida*. Paid off in October 1963, she was rescued from the breakers by a group of private citizens and is now a museum ship in Hamilton, Ontario. To walk on board this beautifully preserved vessel is to step back into naval design concepts of the 1930s, when ships were tough and their ships' companies tougher, a reminder of how much has changed.

So, how should a 21st-century observer recall and assess the Tribal class destroyers? They were highly regarded in their day but, as with all ship designs, especially in wartime, they soon passed their peak of effectiveness. As the nature of warfare changed, particularly with regard to anti-air warfare, adjustments to their armament were made but, as Collins noted in 1944, not as fast as required by the threat. The toll of British Tribals bombed to destruction is a telling point, as is the rapid 'acquisition' of additional Bofors guns by the Australian Tribals to meet the Kamikaze menace. At the inception of the Cold War, attention was turned to their ASW capabilities. The modifications made were never tested in battle, but the Tribals mounted at least as effective an ASW suite as the early 'fast anti-submarine warfare frigates'. In addition, just to show that navies always plan to fight the last war, it was their gunnery systems which were in such demand in Korea.

There is ample evidence that the design of their forward hull structure was insufficient to withstand the hard pounding that the ships received initially in operational circumstances. Once recognised and corrected, this was less of a problem; when damage did occur it was possibly due to insufficient care on the part of commanding officers eager to impress. There were a sufficient number of incidents of damage

inflicted on Tribal hull and machinery by the enemy, by wharves, shoals and other ships to show that otherwise they were a hardy platform. Their longevity points to this conclusion as well. *Iroquois* gave the RCN 20 years of service in peace and war, and many others almost achieved this as well. *Warramunga*'s 500,000 miles adds lustre to the story.

Moving away from the operational and technical to the emotional, each of the three navies which operated Tribal class destroyers thought sufficiently well of them to use their names for new ships. That should not be surprising. Their operational records and the legends that have grown out of them, and the esteem in which their officers and men held them, almost demand that their names and the battle honours they won be perpetuated. The British Tribals set the pace in operational performance and achievement. For the Australians and Canadians they were the first modern world-class destroyers they had owned, and they tried hard to live up to the standard set by the British. Thus, it was not just the appearance of their ships that Tribal destroyer men were proud of, and one could not ask any more of any warship design.

Notes

1. David Lyon, 'The British Tribals 1935', in Anthony Preston (ed), *Super Destroyers: The Big Destroyers Built in the 1930s for Britain, France, Germany, Italy, Japan and the United States*, Conway Maritime Press, London, 1978.

2. Japanese Destroyer *Fubuki* (1927), <http://en.wikipedia.org/wiki> (29 July 2009).

3. The National Archives ADM 116/3734, Tribal and I Class Destroyers: Disposition and Function.

4. The National Archives ADM116/3734, Tribal and I Class Destroyers: Disposition and Function, letter M02506/27.

5. The National Archives ADM138/732, Ships Cover Tribal Class destroyers.

6. Martin H Brice, *The Tribals: Biography of a Destroyer Class*, Allen, London, 1971, p. 15.

7. John Alliston, *Destroyer Man*, Greenhouse Publications, Melbourne, 1985, pp. 136-137.

8. Brice, *The Tribals*, p. 251.

9. The National Archives ADM226/38, Tribal Class Destroyers – Seaworthiness.

10. National Archives of Australia A5954, Item 1005/15, Visit of CNS to London: Brief Relating to Government's Naval Policy.

11. John Jeremy, *Cockatoo Island: Sydney's Historic Dockyard*, University of New South Wales Press, Sydney, 2005, pp. 41-42.

12. Jeremy, *Cockatoo Island*, p. 85.

13. Michael Whitby, 'Instruments of Security: The Royal Canadian Navy's Procurement of the Tribal –Class Destroyers, 1938-1943', *The Northern Mariner*, vol. 11, no. 3, 1992, p. 1.

14. Marc Milner, *Canada's Navy: The First Century*, University of Toronto Press, Toronto, 1999, p. 80.

15. Roger Sarty, 'Admiral Percy W. Nelles', in Whitby, Gimblett & Haydon (eds), *The Admirals: Canada's Senior Leadership in the Twentieth Century*, Dundurn Press, Toronto, 2006, pp. 77-78, 80-81.

16. Dean Chappelle, 'Building a Bigger Stick: Then Construction of Tribal Class Destroyers in Canada, 1940-1948', *The Northern Mariner*, vol. 5, no. 1, 1995, p. 3.

17. Whitby, 'Instruments of Security', pp. 5-6.

18. Whitby, 'Instruments of Security', p. 4.

19. 'HMCS HURON – Tribal Class Destroyer', <http://www.naval-history.net/xGM-Chrono -10DD-35Tribal-Huron.htm> (17 July 2009).

20. Chappelle, 'Building a Bigger Stick', pp. 6-9.

21. The Canadians wanted their Tribals to be engaged in the shooting war as destroyers and not as convoy escorts across the Atlantic. This course of action was most passionately advocated by the RCN Director of Plans in a December 1942 paper, Whitby, 'Instruments of Security', pp. 9-10.

22. 'HMCS Iroquois History', <http://jproc.ca/Iroquois/history.html>, (17 July 2009).

23. Australian War Memorial (AWM) 78, Item 40/1 Pt 2, HMAS *Arunta* Report of Proceedings, December 1943.

24. Sam Whyte, *HMAS Warramunga's History 1942-1959*, HMAS Warramunga Veteran's Association, Earlwood, 1990, p. 42.

25. National Archives of Australia MP1049, Item 2026/4/172 – Inspection of HMAS *Warramunga* by CCAS 1944.

26. GGO Gatacre, *A Naval Career: Reports of Proceedings 1921-64*, Nautical Press & Publications, Manly, 1982, pp. 192-205.

27. Chappelle, 'Building a Bigger Stick', pp. 10-11, 13.

28. Milner, *Canada's Navy*, pp. 199-200.

29. 'Nootka's History', <http://jproc.ca/nootka/history.html> (17 July 2009).

30. Milner, *Canada's Navy*, pp. 208-209.

31. Edward C Meyers, *Thunder in the Morning Calm: The Royal Canadian Navy in Korea 1950-1955*, Vanwell Publishing, St Catherines, 1991, pp. 27-29.

32. Thor Thorgrimmson and EC Russell, *Canadian Naval Operations in Korean Waters 1950-1955*, Department of National Defence, Ottawa, 1965, pp. 4-5.

33. Milner, *Canada's Navy*, pp. 208-209.

34. Meyers, *Thunder in the Morning Calm*, p. 132.

35. Meyers, *Thunder in the Morning Calm*, p. 86.

36. Meyers, *Thunder in the Morning Calm*, pp. 98-102.

37. James Field, *History of United States Naval Operations Korea*, Department of the Navy, Washington DC, 1962, pp. 425-426.

38. Anthony Cooper, 'Commander Warwick Bracegirdle in Korea 1952', *Journal of Australian Naval History*, vol. 6, no. 2, 2009, pp. 25-30.

39. Meyers, *Thunder in the Morning Calm*, p. 203.

40. Meyers, *Thunder in the Morning Calm*, pp. 119-122.

41 Milner, *Canada's Navy*, pp. 233-235.

5 The Dominion Yachtsman Scheme 1940-45

Jan Roberts-Billet

At a gathering of naval officers in Sydney in early 2002, one of the Yachtsmen Scheme officers, returned serviceman, Lieutenant Max Germaine, RANVR, spoke of his memories of serving in the Royal Navy (RN) during World War II (WWII). His talk was light in tone, recounting with humour the experiences of his group of volunteers during their passage to the United Kingdom in December 1940. He stressed the service, honours and awards of a number of the 'yachties' and recalled the bravery of several of them in action. However, Max Germaine, in fact, had other less happy memories he did not share that day; memories of convoy duties and the guilt he had carried all his life, of being unable to rescue survivors of torpedoed ships. He also hid on this occasion a hurt and grievance that related not simply to the terrible history of his own and his comrades' war experiences but how he and his group had been treated since. For Germaine had not served in the Pacific throughout the war with the Australian navy, but as part of a group of men recruited through the Yachtsmen Scheme to be trained as officers in the RN for service in the northern hemisphere. Their war record was a miniscule undifferentiated part of the huge history of the RN during WWII. At home in Australia, however, their war service slipped from memory and proper commemoration as the two countries, so bound to each other by strong imperial ties at mid-century, had by the century's end become distanced by competing national interests and the resurgence of an independent Australian nationalism. Hence, the Yachtsmen Scheme volunteers no longer fitted the national narrative of young men who had sacrificed their youthful ambitions, their education and their health for the protection of their country from oppressive regimes. Yet they remained scarred by what they endured and witnessed through these years of service and by grief for the friends and others, they saw maimed and lost. By the early-21st century, they wanted similar recognition to their Australian compatriots and in 2002, Lieutenant Keith Nicol and Lieutenant Commander Clive Tayler approached me to write the story of the yachties. At the time, I was offered the opportunity to research their story as a Masters' thesis. This article discusses several aspects of my research:

- The reasons for the scheme and the service of some of the volunteers.

- How they were received.

- Why there has never been the recognition accorded to the Australians, about 1500 of them, of whom the yachties are a third, who served with the RN during WWII.

After the outbreak of war with Germany on 3 September 1939, the following six months made the Allies aware of just how ill prepared they were for military conflict against a well-equipped and organised enemy. Historians have described this period as the 'phoney war' for it was not until the fall of France in May 1940 that many Australians began to comprehend the seriousness of the conflict. This 'phoney war' was far from the reality that the men of the RN were experiencing with the repeated German U-boat and air attacks in the North Atlantic. The losses of men and ships were horrendous and the odds against victory were becoming all too obvious. Australians were concerned that this crisis at sea placed their link with Britain at risk.

Among the surviving yachties interviewed, the belief is strongly held that the Admiralty approached the Dominions to enlist men with small boat-handling skills following the disastrous retreat of the Allied forces at Dunkirk. In fact, the Yachtsmen Scheme was already in the process of being organised by 26 May 1940 when the Dunkirk evacuation began. The Australian Prime Minister received a memorandum from the Lords Commissioners of the Admiralty, requesting the setting up of the Yachtsmen Scheme in early May.[1] It asked that arrangements be made to appoint a limited number of men to direct commissions in the Royal Naval Volunteer Reserve (RNVR) and accept a number of volunteers as ordinary seamen with a view to their promotion to the commissioned ranks after a period of service.

The RNVR had originated in the late-19th century with a nucleus of men formed from yachtsmen and members of rowing clubs. While men from all walks of life ashore were theoretically eligible, naval interests and skills were considered desirable. At the outbreak of WWII, the approximate strength of the volunteer reserve in the United Kingdom was 1000 officers and 7000 ratings. Many were yachtsmen or had previous sea experience in the RN or Merchant Navy but others were a mixed group of stockbrokers, barristers, bankers, authors, actors, and other professionals all keen on sailing and the sea.[2] Most temporary officers came from the lower deck and had been marked as 'White Paper' candidates by their commanding officers and were recommended to the Admiralty.

The Dominion Yachtsmen Scheme volunteers were recruited as potential officers through this method. Without the volunteer reserves, both from England and the Dominions, the RN would not have been able to continue the war at sea. In my investigation of the WWII honour boards of a number of Australian yacht clubs however, very few yachties were recruited through this avenue. Only one, Windas Smith, is recorded on the memorial board of the Royal Melbourne Yacht Squadron in St Kilda, of 148 volunteers from the club. Ian Startup, the son of the Customs Officer in Williamstown, who tragically went down in the HMS *Hood*, is the only yachtie on the Royal Victorian Yacht Squadron board at Williamstown. The Royal Sydney Yacht Squadron lists 7 Yachtsmen Scheme members of the 124 members who served in WWII. Only 6 of the 18 yachties I interviewed had yachting experience – all as crew members.

In July 1940, advertisements were inserted in the newspapers of each of the capital cities inviting applications for service as officers in the volunteer reserve. Applications were invited from 'Gentleman' in two groups. The 'A' Class candidates:

> between the ages of 30 and 40 for direct Commissions in the Royal Naval Volunteer Reserve who possess a knowledge of Navigation equivalent to that required for the Board of Trade Yachtmaster's (Coastal) Certificate.

These men were appointed immediately as temporary probationary sub-lieutenants. Lieutenant Commander Bill Wallach failed the Yachtmaster's Certificate twice before he was accepted. He already had a Bachelor of Commerce from the University of Melbourne but was very determined to succeed and qualify as a naval officer. His tenacity and determination were further exhibited when, as first lieutenant of Motor Launch 270 he succeeded in shooting out a German searchlight during the St Nazaire raid in March 1942. For this action, he was awarded a Distinguished Service Cross.

The 'B' class candidates were 'between the ages of 20 and 30 for entry in the Royal Naval Volunteer Reserve as Seamen with opportunity for appointment as officers'.[3] Like many young volunteers at this time, Don Reddin put his age up a year to qualify; he was 19.

As a group, the initial selection of the yachtsmen volunteers in Australia would appear to have been influenced by the same unofficial criteria that the selection boards used for young midshipmen for Naval College entry. The use of the term 'gentlemen' in the initial recruitment advertisements suggests certain expectations about the social background, skills and educational abilities among potential candidates for commissions in the RN. However, it is also clear through the interviews that academic ability, especially in the maths and science fields, was significant. The increased importance of technology in sea warfare opened up the selection process at this time and the volunteer reserve officers would bring with them different skills and a broader education, which would benefit the respective navies and assist in final victory for the Allies.

The first group of 58 ordinary seamen and 14 officers embarked in RMS *Strathnaver* in September 1940 as Royal Australian Naval Volunteer Reserve, although they went in civilian dress and received no preliminary training in Australia. They were kitted out when they arrived in England and were on Australian rates of pay. Apparently, the officers (the 'A' class) were able to have a flash, 'Australia' on the shoulder of their uniform if they applied to do so and the commanding Admiral agreed that the ordinary seamen could have flashes but they had to organise it among themselves.[4] The ship was on its way to England to be converted into a troop ship and the men enjoyed the luxury of private cabins, morning tea and fruit in bed. Later groups did not experience quite the same conditions. It is believed that only 12 subsequent groups embarked, none as large as the first.

The ships in which they sailed and the men with whom they sailed to Britain became of great significance to the yachties. In later years, these ships were the means by which they traced and contacted each other and fostered a collective memory. The work of Ken Halliwell, Bob Fotheringham and Roy Hall during the 1980s resulted in 467 Yachtsmen Scheme enlistments being identified. Later work by Clive Tayler and Keith Nicol has increased the nominal roll to 500. The storyboard in the WWII gallery in the Australian War Memorial is now incorrect as it states only 370 Yachtsmen Scheme volunteers.

On arrival in Britain, the volunteers were located at HMS *Collingwood* near Portsmouth where training was undertaken, prior to being drafted to ships for sea-time on the lower deck. As members of the Yachtsmen Scheme, a personal white Commission Warrant paper was sent to each ship to which they were drafted and from then on they were under constant surveillance and some had the most difficult or unpleasant duties to perform. While some were lucky and stayed together, many yachties served as the only Australian onboard. They were spread across the fleet in a variety of ships, from battle cruisers and destroyers to Fairmiles. The theatres of war in which these men found themselves were equally varied and many were initiated rapidly into the realities of life at sea during wartime. For some, the required sea-time of three months often became much longer.

Nicol was delayed quite a long time with wounds. He had been drafted to a motor gunboat flotilla based at Dover that was involved in landing the first commandos into France – Lord Lovett's Scouts. Keith suffered burn and blast damage when a shell exploded behind him and was hospitalised for some time. Some yachties were initiated into the grim realities of war at sea within a very short time. Lyle Miller, from Adelaide, was drafted with Ray McDonald to HMS *Somali*, one of the famous Tribal class destroyers and they were very proud sailors to be on such a ship.

> We soon learnt what was in store for us because we joined the battle fleet … to go down to the Mediterranean … the *Ohio* convoy. This of course is [sic] July '42 and the position in Malta was absolutely desperate … I think it was a twelve or fourteen-lot convoy which was virtually unknown. We had fourteen ships … to escort. There were the *Nelson* and the *Rodney*, two battleships; three aircraft carriers, half a dozen cruisers, certainly two dozen destroyers and rescue vessels, to steam through, get through at Malta. There were fourteen merchant ships … Appalling losses! Five of them got through to Malta, two under their own steam and three were towed in. This was life-saving for Malta … This had been a tremendously exciting convoy voyage and one which … you'd think was hardly likely to be repeated.[5]

However, after a short leave these young sailors were off to Scapa Flow to join a very large navy force to escort a convoy to Russia.[6] PQ18 was to be the second worst Arctic convoy, as *en route*, heading for Archangel, the convoy was attacked

by U-boats and 13 of the 40 merchant ships were sunk. *Somali* was torpedoed and finally broke in half. Ray McDonald was lost, but Lyle was one of only four men rescued from the frozen waters.

Eight of the yachtsmen - Bob Fenwick, Tom Martin, Geoff Danne, Colin Downie, Wally Washington, Frank Buxton, Alex Osborne and Ian Rhodes - were drafted to HMS *Kashmir* in Plymouth. As a duty destroyer, *Kashmir* went to sea immediately, to the Mediterranean where she was based in Malta, escorting other ships through the Strait of Gibraltar to Malta and doing bombardments of the Libyan coast.[7] In May 1941, they sailed from Malta to Crete to assist with the evacuation of Allied troops. *Kashmir* was sunk in less than three minutes by dive-bombing Stukas. The noise was terrifying. Bob described them as 'some immense ... birds of prey'.[8] The survivors were rescued by HMS *Kipling*, which although damaged and listing badly, managed to limp into Alexandria Harbour. Bob describes this as the most emotional experience of his life:

> Our poor little ship ... its decks crammed with miserable survivors covered in oil with red oil-burned eyes and aching limbs, then entered harbour. Almost the whole of the Mediterranean Fleet was in that harbour. Battleships, aircraft carriers, heavy cruisers, light cruisers and destroyers, they were all there. As we came in, the order was given to the Fleet to 'Clear lower deck!' and every man aboard every ship came on deck and a mighty cheer went up. There were not too many dry eyes that day ... and even now I have difficulty holding back the tears when I recount the experience.[9]

Tom, a *pom pom* gunner wounded in his action station, managed to cut away some rafts, thereby saving many lives and then managed to climb up the side of *Kipling* over a net, even with his spine broken. He was in hospital in the Middle East until January 1942, when he was sent back to Australia. He was posted to HMAS *Australia* before being sent to an Officer Training Course in Melbourne in late 1943.

Another Australian yachtie in this action was Ordinary Seaman Ian Rhodes who, as *Kashmir* was sinking rapidly, climbed up to the starboard Oerlikon and opened fire on a dive-bombing Junkers attempting to machine gun survivors. The plane was hit and crashed into the sea. For his 'outstanding gallantry, fortitude and resolution' Rhodes was awarded a Conspicuous Gallantry Medal, ranking next to the Victoria Cross, the only one ever awarded to an Australian.[10]

Ted Thomas and Jack Linton were drafted for their sea-time to HMS *Fiji* and both survived her sinking in the Mediterranean. Ted's action station was in the lower steering position below deck and fortunately, the doors had not been bolted down, so he and other crew could get up on deck. The ship was listing badly, Ted recalled:

> I took my boots off and instead of flinging them over the side … I put them down – all neat and tidy and I walked down the side of the ship … into the water and then I started laughing. I thought what a really stupid thing that was to do. Some of the sailors around the ship said, 'Not a bloody laughing matter, mate.'[11]

After five hours in the water, during which time the survivors were under machine-gun fire from the *Luftwaffe*, they were rescued by HMS *Kandahar* and taken to Alexandria. They were repatriated to England via Port Said to Durban where they were transferred to *Empress of Australia* for the trip back to Portsmouth in steerage. Jack Linton, with great initiative upgraded himself and his mate to petty officers' stewards where they learned the art of peeling grapefruit.

After serving their sea-time, the men went before a selection board and were, if accepted, sent to HMS *King Alfred*, the training establishment for volunteer reserve officers. During the war, some 48,000 officers passed through this base, of which the 500 yachties accounted for only 1 per cent.

They then started on an intensive course of three months and those who passed the written examination, were commissioned as temporary probationary sub-lieutenants. Details of the training which the yachties underwent are very sketchy and reliant on the memories of the men as no records of the structure and content of the training appear to exist either in Australia or the United Kingdom. The newly commissioned officers were then sent separately to other more specialised areas for specific training, depending on their preferences. Those selected for coastal craft training were sent up to Fort William in Scotland. While there, Bob Fenwick was selected for both anti-submarine and command courses. Many did a gunnery course at the famous Whale Island.

Clive Tayler requested to serve in submarines but was told to get some sea experience and a Watchkeeping Certificate. He chose destroyers and was appointed to the ex-American destroyer HMS *Ripley* on the North Atlantic convoys for the next six months. Incredibly, in that time their convoy was never attacked. He wonders at the rapidity of his promotion:

> [I was] commissioned end of December 1941, I joined my first ship in February, HMS *Ripley*. Something like eight months after that I was Senior Officer-of-the-Watch of this American Destroyer as a Sub-Lieutenant with ten months seniority. That was how short they were of qualified people.

After a year on the convoys he applied for 'boats' and was sent to the submarine training depot HMS *Elphin* at Blythe on the east coast of England, possibly the only one of the yachtsmen to do so.[12] For the remainder of his service Clive served in two submarines before being appointed as first lieutenant to HMS/M *Vivid* in the Mediterranean.

However the majority of the yachtsmen served on light coastal forces craft ranging from trawlers to motor launches to, later in the war, landing craft – tank and infantry where their particular skills were important. Some volunteered for special forces units.

Whatever their specialised training, most yachtsmen served on convoy duty in the 'Battle of the Atlantic', a phrase coined by Winston Churchill. By July 1940, it was obvious that the British Isles were very vulnerable to a blockade and by September and October of that year the Germans were inflicting serious losses on convoyed shipping by U-boat 'wolf pack' night attacks. German U-boat *U99* claimed to have sunk 20 ships and damaged two from a convoy of 34 in October 1940. The Battle of the Atlantic, fought between September 1939 and May 1943, was a battle on which the whole outcome of the war depended, as every ship to and from Britain had to pass through some part of the Atlantic Ocean.

From June 1941, total anti-submarine cover across the Atlantic was established and in July, convoys southbound were given continuous anti-submarine escort to Freetown in Sierra Leone. Sub Lieutenant Ellison Hawker's first posting was to HMS *Corinthian*, a converted fruit boat, stationed at Freetown. To this day, now aged 96 he carries with him the trauma of rescuing survivors from *Duchess of Atholl* and *Empress of Canada,* which was three days sailing time away. The convoys sailed in numbers of 30-50 ships, at the rate of the slowest, possibly 6 knots, were formed into columns within the convoy and could include British, Allied, American and neutral merchant ships. RN corvettes with the escort commander in a frigate escorted them. Destroyers only sailed with the most important convoys. Eventually as the war progressed, air escort of convoys, the deciphering of the German codes, especially Enigma and the development of submarine sound detection equipment and radar were all significant in final victory for the Allies in this maritime war.

Many of the yachties were involved with combined operations, usually in support ships and in landing craft. Lieutenant Geoff Danne though served in Operation MERMAID, a Combined Operations Pilotage Party in Italy, Sicily, Normandy, Burma and Holland. The combined operation carried out beach, navigational and military reconnaissance to obtain intelligence for landings and deception in enemy occupied areas. Their secondary role was to pilot assault to beaches and mark mines and clear landing and exit places. Other raids in which yachties were involved were St Nazaire (March) and Dieppe (August) of 1942.

Lieutenant Ted Gregg was sent to America to commission his new Landing Craft - Infantry (LCI 260). When the ship was ready, at last he took her down the Hudson River and berthed alongside the wharf at Manhattan. Gregg recalled:

> It was a bit scary for me as a brand new officer of a brand new crew with a brand new ship, going down the Hudson River with all these ferries going backwards and forwards.

After Anzio, they were in the Adriatic running supplies and guns into Yugoslavia for Marshall Tito, and bringing wounded and refugees out. In all, Gregg and his ship did about 20 landings and commando raids over this period, only on moonless nights. One of his best jobs, he felt, was to land Royal Marine commandos who penetrated behind the lines to rescue over a hundred escaped Allied prisoners of war through the German convoys in Italy. He was awarded a Distinguished Service Cross for his 'skill and daring' during various operations in the Dalmatian Islands and in Greece as well as a commendation from General Zervas.

One group of the yachties was not posted to sea and they are remembered for the incredibly courageous work they carried out in mine disposal or rendering mines safe. These men were awarded the highest honours of either the George Cross and/ or the George Medal. Lieutenant James Kessack died in action attempting to render a mine safe in April 1941. He was one of five who sailed with the first Yachtsmen Scheme mobilisation in September 1940 in *Strathnaver.* He had in that short time in England dealt with ten unexploded mines. Another yachtie rendering mines safe was Lieutenant Hugh Syme, the most highly decorated Australian officer of WWII.

No story of the Yachtsmen Scheme would be complete without the mention of their contribution to D-Day. Nicol believes that about 300 of the men must have served in the Normandy landings in June 1944, but Lieutenant Richard Pirrie was the only yachtsmen casualty when HMS *Copra* capsized in heavy surf. Lieutenant Lyle Miller was posted from January 1944 to May 1945, to HMS *Sancroft*, one of the two large converted cable layers in Force PLUTO (Pipe Line Under The Ocean), designed to supply petrol for the invasion. *Sancroft* laid an 87-mile pipe from the Isle of Wight to Cherbourg.

In summary, the young Australians recruited through the Yachtsmen Scheme to be trained as officers in the RN were successful in achieving their ambitions. They were a highly selected group whose level of education and social skills qualified them for acceptance within the RN. The achievement of gaining a commission gave them a sense of privilege and status. They were welcomed by their fellow officers and the men with whom they served and succeeded in acquiring the skills and professional competence necessary within the RN in various theatres of war in the northern hemisphere. Certainly, Lord Louis Mountbatten believed the Australians had special qualities and reputedly requested some of 'those hot-shot Australians' for his destroyer flotilla and combined operations. They earned respect, acceptance and acknowledgement. Their presence in Britain was noted and they were aware how important this was to public morale. Many of the men recorded the positive comments they received from the British public. They were proud to be Australian and were welcomed also, as Dominion servicemen supporting the mother country.

The yachties became used to their status as naval officers and enjoyed the kudos that accompanied this acceptance. After four or more years, they returned home to an Australia that was preoccupied with the final stages of the Pacific War and a much smaller navy where only a handful of the men were given postings commensurate with their status and competence. Lieutenant Max Germaine was offered temporary command of HMAS *Vendetta* and Lieutenant Commander Ellison Hawker was posted to temporary command of HMAS *Stuart* on his return and only a handful were offered positions in the permanent RAN. I only know of Frank Appleton who accepted this offer. Within the general public and the forces, there was no interest in their testing experiences, and virtually no acknowledgement of 'their' war which was foreign to, or at least distant from, the immediate pressures of the war against Japan. By the early years of the 21st century, the men finally sought belated recognition. They felt recognition was due, not only for their involvement in the war on the other side of the world to which they felt they had contributed significantly to the Allied victory, but also validation of their service there, something that Australians had never formally or publicly accorded them.

The group of yachties who survived to tell their stories for this study were proud of their record and believed that as a cohort they are the most highly decorated group of Australian servicemen. In all, this group of about 500 Australians were awarded 4 George Crosses, 9 George Medals, 30 Distinguished Service Crosses and 30 Mention in Despatches, 3 Orders of the British Empire, a Member of the British Empire medal and a Conspicuous Gallantry Medal. Over 60 officers qualified for officer status in the RN, which meant that they were considered as equivalent in competence to permanent RN officers and could, if desired, continue to serve with that rank in the peacetime navy. I suspect that more of the men would have qualified but did not see the need.

Some comparison can be made with the Australians who served in Europe with the Royal Air Force. There has been little acknowledgment of the Australians who served, as another elite group, in Bomber Command. Few have articulated their experiences and most of the Australian public would not know of the details of their selection, training, the task they were asked to do, the huge losses suffered, nor the post-war questioning of the morality of the bombing raids. Nor would the public be aware of the memorials to these Australians at Runnymede and Lincoln in England. It was only in 2005 that a memorial to the men in Bomber Command was unveiled in the grounds of the Australian War Memorial. While the number of Australian casualties in Bomber Command, some 4050 dead, was far higher than the yachties, the proportion of deaths, at 7.3 per cent of the number of yachtsmen enlistments in the RN, was similar.[13]

Thirty-six Yachtsmen Scheme men lost their lives during WWII, of whom nine were serving in the Southeast Asia theatre, six of these men in the period following the fall of Singapore. Another six men were lost returning to Australia in Steam Ships *Ceramic, Nellore* and *Melbourne Star*. Those men who served with the RN

for the duration spent some four or more years away from Australia and two men, lieutenants Peter Mews and John Lefroy served in HMS *Euphrates* in the Persian Gulf without relief for 54 months. The heroism and glamour of war indoctrinated into the public perception of WWII through film and fictional accounts is rarely to be found in the men's recollections. Most of their memories are frequently harrowing and emotionally disturbing and because their involvement in the war at sea across the other side of the world and in the service of the imperial power has not sat comfortably with the perception of Australian identity post-war, the men have received little recognition of their service. Recently I applied for a small grant through the Department of Veterans' Affairs to assist with further research towards publishing the Yachtsmen Scheme story. It was refused on the grounds that 'although the work is focused on Australians it concerns the RN rather than an Australian unit and as such is outside the guidelines'. The reality of past Dominion commitment and support by Australia and continuing cooperation within the Commonwealth would appear to have been, for the Yachtsmen Scheme volunteers at least, discounted and ignored.

Notes

1. National Archives of Australia MP 981/1, Item 592/201/644, Royal Australian Naval Volunteer Reserve – Yachtsmen – Enrolment 1940-1942, Department of Defence [III], Central Office – Navy Office, Correspondence files, multiple number series ('201' series), 1 April 1923 - 31 Dec 1950.

2. J Lennox Kerr & David Jones (eds), *The Wavy Navy: By Some Who Served*, George G Harrap, London, 1950.

3. Kerr, *The Wavy Navy: By Some Who Served*.

4. Author interview with Lieutenant Bob Fenwick RANVR, 2 June 2003. Interestingly it was not until 1967 that the 'Australia' flashes were introduced to RAN uniforms to distinguish them from those of the RN. TR Frame, *Pacific Partners: A History of Australian-American Relations*, Hodder & Staughton, Sydney, 1992, p. 68.

5. Author interview with Lieutenant Lyle Miller, 11 October 2002.

6. For a description of the Arctic convoys see Richard Woodman, *The Arctic Convoys 1941-1945*, John Murray, London 1994.

7. For more detail in relation to the Malta convoys in the Mediterranean see Richard Woodman, *Malta Convoys 1940-1943*, John Murray, London, 2000.

8. Fenwick interview.

9. Fenwick interview.

10. James J Atkinson, *By Skill and Valour: Honours and Awards to the Royal Australian Navy for the First and Second World Wars*, Spink & Son, Sydney, 1986, p. 103.

11. Author interview with Lieutenant Ted Thomas, 31 August 2003.

12. Author interview with Lieutenant Commander Clive Tayler, 2 November 2001.

13. Hank Nelson, *Chased by the Sun*, Australian Broadcasting Commission, Melbourne, 2002, p. 276.

6 The British Pacific Fleet in 1945

David Hobbs

The British Pacific Fleet (BPF) was created with the aim of including British forces in operations against the Japanese mainland that would end the war in the Far East. The Quebec conference of Allied leaders in August 1943, codenamed QUADRANT, had agreed that greater priority should be given to the Pacific War, whilst retaining the 'Germany First' principle but for much of 1944 Churchill and the British chiefs of staff argued bitterly about how best to implement that decision. The former wanted to see the defeats of 1941-42 redeemed by the re-conquest of Burma, Malaya and the oil-rich former Dutch East Indies island of Sumatra.[1] The chiefs of staff conceded that a campaign in Burma was inevitable to support American ambitions to provide overland supplies to the Chinese army along the 'Burma Road' but argued that fighting on the littoral of the Indian Ocean would not be seen post-war as central to the defeat of Japan. On the other hand, a British fleet fighting alongside the US Pacific Fleet would be more economical in terms of labour and would be seen post-war as a significant contribution to the defeat of the enemy.

British plans for the Pacific came into sharper focus after QUADRANT and the second Quebec Conference, held in September 1944 and code-named OCTAGON, set a timetable for the defeat of Germany in October 1944 and that of Japan 12 months later. In fact, Germany was not defeated until the spring of 1945, but it had become clear that if Britain wanted to play a part in the principal operations against Japan, the pace of American progress meant that action needed to be taken quickly. Time continued to be lost, however, by the acrimonious discussions between Churchill and the chiefs of staff that continued through the first eight months of 1944. However, at OCTAGON, the march of events made a decision imperative and Britain offered to send a balanced fleet including at least four fleet carriers to the Pacific by the end of the year. Two months after OCTAGON, American agreement in principle was reached that a British carrier task force would fight in the Pacific despite continued opposition from Churchill and the Chief of Naval Operations Admiral Ernest J King, USN.[2] By then it was clear that the United States had become the senior ally and the knowledge of where power now lay, especially in the Pacific, which led to a degree of harmony in the decision-taking process that had been absent before.

However, Britain could not achieve the aim alone. After five years of total war, she relied heavily on the Commonwealth for labour, ships, industrial capacity and land for bases. The man chosen to command the new fleet had to be an outstanding diplomat as well as an able leader and tactician. Made up from elements throughout the British Empire, the BPF was to be subordinate to American orders in action, using US Navy signal procedures and codes. The man chosen to be Commander in Chief (CinC) was Admiral Sir Bruce Fraser, RN, the outstanding leader of his

generation. He was responsible to the Admiralty in London for the general direction of forces under his command; to the Australian Government for the dockyards, air stations, depots and barracks that formed his main base and to the individual navy boards of Australia, Canada, New Zealand and South Africa for the men and ships they provided him. Operationally he took his orders from Admiral Chester Nimitz, USN, the Allied CinC Pacific Ocean Areas. However, because of his own seniority, he delegated sea command to Vice Admiral Sir Bernard Rawlings, RN, his second in command.

Creation of the Base

Before the BPF could enter the Pacific Theatre, it had to establish a base complex to support every aspect of its operations. The major RN facilities at Singapore and Hong Kong had been overrun in the first months of the Japanese advance. The loss of HM Ships *Prince of Wales* and *Repulse* at the same time and heavy commitments west of Suez negated any possibility of Britain sending a 'main fleet' to the Pacific in accordance with pre-war plans until the German fleet was destroyed. Australia was the only feasible location for the new fleet, but in the autumn of 1944, it lacked much that would be needed and was heavily committed to supporting US forces in the South-West Pacific Area.[3] Men and material would take time to travel the 12,000 miles from the United Kingdom and the Japanese mainland was 4400 miles from Sydney so that intermediate bases closer to the scene of operations would have to be identified, set up and stocked. The Royal Navy (RN) plans in 1944 had assumed operations off the Philippine Islands but by March 1945, the BPF would be operating at nearly twice that distance with a consequent need for more logistical shipping. The time wasted by the Prime Minister prior to OCTAGON was to limit the ability of the fleet to deploy once agreement was reached.

A mission led by Rear Admiral CS Daniel, RN, was sent to the US Pacific Fleet Headquarters at Pearl Harbor and Australia in early 1944 tasked with examining the US Navy fleet support organisation in detail and making recommendations.[4] It was made clear to him that the RN would have to be entirely self sufficient with regard to naval, victualling, armament and air stores and that, whilst furnace fuel oil could be drawn from shared bulk stores, an amount equivalent to that taken out would have to be put in by British supply tankers. Since most British ships together with their weapons and ammunition differed from American stock this was a sensible and reasonable approach but, ironically, by late 1944 the RN's carrier air groups contained more American than British aircraft but they had been so extensively modified that they differed from the US Navy standard with the result that they, too, were incompatible. Generously, the US Navy did offer Daniel a share in any excess capacity it had ashore and afloat in the combat areas and agreed to help with battle damage repair on an identical basis to its own ships.

Detailed planning began in May 1944 when Admiral Daniel and his team arrived in Australia. At first, they did not know when the BPF would arrive or where it

was to operate but by November, they had produced a 250-page administrative plan that was forwarded to the Joint Administration Planning Sub Committee of the Australian Defence Committee. This body assessed the cost of what was needed in terms of the labour and materials that would have to be provided by the Australian Government to meet the Admiralty's requirements. The document included broad requirements for dockyards, port facilities and stevedores, naval air stations and air yards, barracks, workshops, transport, victualling, naval, air and armament stores depots and local purchase facilities for a range of commodities on a massive scale. The result of the Australian deliberations was a document that formed the basis for the development of the BPF's main base complex throughout 1945.[5]

On 10 November 1944, Vice Admiral JW Rivett-Carnac, RN, was appointed as Vice Admiral (Q) (VA(Q)) with his headquarters in Melbourne. He had responsibility for the whole logistical support of the fleet including the activities ashore and ships of the Fleet Train. In December 1944, a headquarters was established in Sydney for the Flag Officer Naval Air Stations, Australia, Rear Admiral RH Portal, RN. His title was changed in 1945 to Flag Officer Naval Aviation Pacific. He was responsible to the VA(Q) for the supply of replacement aircrew, aircraft and engines up to and including the combat area; the dissemination of information to enable the best distribution of scarce air material in Australia and the maintenance and repair of aircraft in air yards under his control. He was also responsible for training aircrew in Australia to meet the fleet's requirements and for providing the commander in chief with aviation advice when the carriers were at sea.

The air requirements alone were on a large scale. Some airfields, such as Nowra, were taken over complete from the Royal Australian Air Force (RAAF) and run by RN Mobile Operational Naval Air Base, personnel sent out from the United Kingdom. Others such as Schofields outside Sydney were built as RN Air Stations from scratch but still manned by the Mobile Operational Naval Air Base personnel. A huge industrial complex was taken over near Brisbane and run as a Transportable Aircraft Maintenance Yard, which in the event proved to be under employed and far from transportable. Mobile Operational Naval Air Bases were intended, as the name implied, to be mobile but all ended up running fixed bases like their British equivalents in and elsewhere. One, (Mobile Operational Naval Air Base 4), ran an air station on Ponam in the Admiralty Islands, but this was built by the US Navy Construction Battalions or SeaBees, and had become, effectively, a permanent base.[6] Fifteen airfields were operated or planned by and for the RN in Australia. The RAAF provided a wide range of common aircraft stores that proved useful to the Fleet Air Arm and provided transport that helped move aircraft from docks to airfields and back again. This was unglamorous but important work as was that of 300 Group Royal Air Force which operated Dakota and Liberator freight carrying aircraft from Australia in support of the BPF. One of the Liberators was fitted out as a VIP transport for Fraser. Over 1000 naval aircraft were assembled in the various airfields, modified to the latest operational standards using production line

techniques and moved forward in replenishment carriers to support the fleet. When the war ended sooner than expected, over 700 aircraft together with engines and equipment were taken to sea off the coasts of New South Wales and Queensland and ditched. They lie there on the seabed still.

Creation of the Fleet Train

In the Atlantic, Mediterranean and Indian ocean theatres the RN had relied on an extensive system of bases to provide ships with fuel, ammunition, stores and repair facilities. The distances contemplated for operations in the Pacific, however, made it impossible for the main fleet to even consider returning frequently to a distant fixed base for replenishment. Consideration had been given to the need for depot ships capable of moving to a remote anchorage after the Abyssinian Crisis of 1937, resulting in the construction of submarine, destroyer and aircraft depot ships, which assumed even greater importance in the Pacific. In 1942, work started to convert five liners into heavy repair ships and from late 1943, the Admiralty began to prepare a list of ships that would be needed to carry logistical support from the Australian main base to the likely combat areas. It was made clear by the British Ministry of War Transport, however, that very few merchant ships could be made available and that the Admiralty would have to rely on the auxiliary shipping it already possessed.

The Canadian Government was able to provide a number of new ships based on mercantile hulls fitted out as repair, maintenance, accommodation and amenity ships. Many were converted from 'Fort' class merchant ships under construction in Canada and the extensive equipment fit varied to allow work on aircraft components, aircraft engines, escort ships, landing craft and coastal forces to be carried out. There were also tankers, store-carriers, tugs, harbour craft, hospital ships and floating docks but few were completed before Victory over Japan Day and even fewer saw operational service. In July 1945, the Fleet Train comprised 10 repair and maintenance ships, 22 tankers, 24 store carriers, 4 hospital ships, 5 tugs, 11 miscellaneous vessels and 2 floating docks.[7] Perhaps the most interesting auxiliary was the amenity ship *Menestheus*, which featured a 350 seat theatre, bars and even a brewery capable of brewing 250 barrels of beer per week. The repair and maintenance ships were commissioned as HM Ships and proved to be valuable assets, some of which saw long service; the last of them HMS *Rame Head*, still technically the property of the Canadian Government was finally scrapped in 2009. A mixture of Royal Fleet Auxiliary and Merchant Navy crews operated tankers and store-ships. The latter, drawn from all over the Empire and the Allied nations were a constant source of wonder to the US Navy that commissioned all its auxiliaries as warships with navy crews.

A Fleet Aircraft Maintenance Group was created which comprised the maintenance carriers HM Ships *Unicorn* and *Pioneer* together with a number of specialist maintenance ships capable of repairing airframes, engines, instruments and

equipment such as hydraulic and electrical assemblies. Additionally a number of escort carriers were used to ferry naval aircraft as freight from the United Kingdom to Australia and to carry fully operational replenishment aircraft from Australia to the fleet carriers in the operational areas.[8] The fleet movement group proved capable of carrying out nearly all the aircraft repair work needed by the BPF up to August 1945.

Task Forces 57 and 37

The BPF was established on 22 November 1944, the remainder of the former Eastern Fleet being re-designated the East Indies Fleet continuing to be based in Trincomalee. The new fleet was balanced and composed mainly of new ships, many of which had only recently arrived in theatre. There were representatives of all the Commonwealth navies including the Canadian cruiser HMCS *Uganda;* New Zealand cruisers HMNZ Ships *Achilles* and *Gambia*; and Australian destroyers HMA Ships *Quiberon, Queenborough, Nizam, Napier, Nepal* and *Norman*.[9] Although the majority of ships were nominally British, many had numbers of Commonwealth sailors within their ships' companies who integrated seamlessly into their duties. The destroyers HM Ships *Quilliam, Quadrant, Quality* and *Quickmatch*, for example, had so many Australian sailors that they were considered by many to be Australian ships.

The fighting core of the BPF was the 1st Aircraft Carrier Squadron, commanded by Rear Admiral Sir Philip Vian, RN, which included all six of the *Illustrious* class armoured carriers in 1945 although only four were in action at any one time. The fleet included *King George V* class battleships, light cruisers and destroyers in growing numbers and it was arguably the most powerful British fleet ever deployed in the pre-nuclear era. The Commonwealth contribution was especially important in terms of the aircrew that made up the 36 naval air squadrons that served in carrier air groups by the time Victory over Japan Day was achieved. By 1945, more than half the Royal Navy's aircrew came from the Commonwealth, either serving in the RN and its reserves or as members of the Royal New Zealand Navy, Royal Canadian Navy (RCN) and RAN and their reserves on attachment. A quarter of all front-line aircrew were New Zealanders and as the war ended hundreds of RAAF fighter pilots who had volunteered to transfer to the RAN Volunteer Reserve for the Fleet Air Arm were undergoing deck landing training in British carriers.

Although the BPF did not arrive in the Pacific until 1945 and could not match the US Navy's scale of under-way fleet support, it had gained some previous experience of strike warfare in the theatre. In 1943, HMS *Victorious* was lent to the US Pacific Fleet at a time when it had only one fleet carrier, the USS *Saratoga*. Having recently taken part in the Malta convoy battles, *Victorious'* fighter control officers had much to offer the US Navy in terms of tactics and technique and were instrumental in improving its air defence organisation. *Saratoga* was lent to the British Eastern Fleet in 1944 and the squadrons passed on the latest US Navy strike warfare techniques to the growing number of carrier squadrons in the Indian Ocean. When it arrived in Sydney in February 1945, the BPF had rapidly to assimilate the US Navy's

tactics, signal codes and procedures. The ships even had to adopt pennant numbers allocated by the US Navy. They were greatly helped in this by the RAN, many of whose ships were already operating as part of the US 7th Fleet and were, therefore, familiar with the different way of doing things.

Among the US procedures adopted was the system of designated task forces and groups. Thus, the BPF was designated as Task Force (TF) 57, although it was only the size of a US Navy task group. The US Fast Carrier Task Force was designated Task Force 58. The US used two strike fleet commanders in the Pacific during 1945 and, although the ships remained largely the same, the fleet's designation changed when the commander changed; one was usually ashore planning the next stage of operations while the other was at sea. Thus when Admiral Raymond Spruance, USN, had sea command his ships were designated the 5th Fleet and when Admiral William Halsey, USN, relieved him it became the 3rd Fleet.[10] The BPF was part of these changes and was designated TF 57 during operations off Okinawa under the former, and as TF 37 during operations off the Japanese mainland under the latter. The Fleet Train was designated TF 112.

The Admiralty intended the BPF to reach its full strength in October 1945 in time for Operation OLYMPIC, the planned invasion of Japan. The arrival and training of new units such as the *Colossus* class light fleet carriers and the build-up of the Australian base and the size of the Fleet Train were geared to this end. The number of tankers, store-ships and replenishment carriers available could not have sustained an earlier build-up of fighting ships at the beginning of 1945.

Operations

Before his fleet was ready to move into the Pacific, Fraser called on Nimitz in Pearl Harbor with key members of his staff. Nimitz asked the BPF to strike at the important oil refineries in the Palembang complex in Sumatra as the fleet deployed from Ceylon (now Sri Lanka) to Australia. He had several reasons for doing so. Between them, the Sumatran refineries provided Japan with about 75 per cent of the aviation fuel it needed and any reduction would have strategic significance. US Army Air Force B-29 bombers had attacked the plants recently using high-level bombing techniques and had failed to score hits; tactical aircraft from carriers were expected to be more accurate. It must also be said that Nimitz wanted a demonstration of the RN capability to carry out sustained strikes at long range so that he could judge the value of the BPF to his command. Fraser accepted immediately and the aircraft carrier squadron relished the chance to show what it could achieve. Models of the refineries were made in the carriers which helped operations staff brief aircrew on individual, specific targets and an 'air co-ordinator', Major Hay, RM, from *Victorious*, was used for the first time in line with US Navy procedures.

The refinery at Pladjoe was attacked on 24 January 1945 and, after delays caused by rain and low cloud, Soengi Gerong was attacked on 29 January after which the fleet proceeded to Australia. The results were most successful, considerable damage was achieved by the set-piece attacks; both refineries were put temporarily out action and neither recovered to full capacity before the end of the war. The cost was high, however, with 16 aircraft lost to enemy action and a further 25 to deck landing accidents and engine-failures. Thirty aircrew were lost, some without trace. The decision to attack the two refineries on separate days telegraphed the intention to return to the enemy who was better prepared for the second strike and the Avenger squadrons suffered in consequence. Some aspects of the search and rescue organisation worked well and destroyers rescued a number of aircrew who ditched west of Sumatra. A submarine placed to the east of the island to rescue aircrew was not told of the delay to the original attack plan and had left the area when a corsair ditched near its briefed position on 29 January. Ominously, replenishment at sea proved to be slow and difficult with none of the carriers able to take on the amount of furnace fuel oil they needed in the time available. Delays and the low stocks of oil remaining in the tankers led to a projected third strike being cancelled. Without modern fleet tankers such as those in service with the US Navy with their robust rigs and high pumping rates, slow replenishment was to be a recurring theme throughout the BPF's operations.

TF 57 was located and attacked by enemy aircraft on 29 January, probably as another result of repeating the first strike. All were splashed by Combat Air patrol fighters but casualties were caused by 'friendly' anti-aircraft fire which hit HMS *Illustrious*. This was to continue to be a problem in the BPF with inexperienced gun crews engaging low level aircraft at close range across a force arranged in a circular disposition.

Aircraft losses were made good in Sydney in February. HMS *Unicorn* had arrived only days before the fleet with replacement aircraft and the first Mobile Operational Naval Air Bases were ready after considerable help from the RAAF, just in time to provide shore-based continuation flying facilities for the carrier squadrons.

The final US decision to accept the BPF for operations alongside the 5th Fleet was not taken until March 1945 after it had sailed from Sydney to Manus in the Admiralty Islands to work up. Despite late opposition, Nimitz had insisted that the BPF form part of his Central Pacific Command and was justified within hours when US Ships *Intrepid*, *Wasp* and *Franklin* were damaged, reducing the number of carriers available for Operation ICEBERG, the landings on Okinawa. Task force 57 operated to the south west of Okinawa tasked with preventing enemy aircraft from staging from Formosa to the combat area through airfields on the islands of Miyako, Ishigaki and Mihara in the Sakishima Gunto. The BPF planned to operate a cycle of two strike days followed by two days of replenishment with four US Navy escort carriers replacing them while they were absent. Strikes began on 26 March, but the airfields proved unrewarding targets, as the enemy was able to repair the runways,

made of crushed coral, every night leaving the work of destruction to begin again at dawn. The Japanese were also adept at building 'flak traps', positioning dummy aircraft as bait to draw aircraft into attacking from particular directions where they could be caught in heavy crossfire. Single passes at very low-level were the only antidote. The fleet's lack of night-flying capability was keenly felt and it was even argued that a Swordfish dropping bombs randomly from altitude at night might have disrupted the runway repair work. Some pre-dawn strikes by Avengers from HMS *Indomitable* were flown hoping to catch Japanese 'early birds' staging through the islands.

Losses of men and aircraft were made good by replacements transferred from the replenishment carriers at sea in relatively safe areas. During these spells, the carrier aircrew were mostly able to rest as defensive fighter and anti-submarine patrols were flown from the escort carrier HMS *Speaker* at first, later replaced by HMS *Ruler* in May. Following the US landings on Okinawa on 1 April 1945, the Japanese reacted strongly and launched a number of Kamikaze attacks, some of which were directed against 1 aircraft carrier squadron. HMS *Indefatigable* was the first to be hit by an aircraft that broke through the combat air patrol and impacted at the base of the island. Despite damage and casualties, she was able to operate aircraft again after repairs that took an hour. During the next month all the British carriers were hit and damaged to varying degrees including *Formidable*, which replaced *Illustrious* in May. Their armoured decks prevented them from suffering any critical damage and all were able to maintain their position in the operational 'line'.

The US Navy was impressed and on 8 April, the USS *Hancock* was so badly damaged by a Kamikaze hit that she had to return to the US for extensive repairs. Admiral Spruance requested that TF 57 strike at airfields in Formosa where it was believed that the most effective suicide units were based, considering that the armoured British carriers would be less vulnerable to counter-attack than their US Navy equivalents. Admiral Rawlings agreed readily despite the fact that his force had been scheduled to depart to Leyte Gulf for a replenishment period after only two more strike days off the Sakishima Gunto. Strikes against Formosan targets were carried out on 11 and 13 April and proved to be the fleet's most successful interdiction operations during ICEBERG with damage caused to airfields, aircraft on the ground, road and rail transport and at least 16 enemy aircraft shot down in air combat for the loss of 3 of its own.[11] As TF 57 withdrew from Formosan waters Admiral Spruance requested it to carry out more strike days against the Sakishima Gunto since the US escort carriers that operated in their absence had only about half the BPF's number of embarked aircraft and had not been able to maintain the same pressure against the islands. Despite the fact that the Fleet Train had no more replacement aircraft and was desperately short of everything, Admiral Rawlings agreed. The increased tasking showed that BPF had been accepted as equals by the seasoned 5th Fleet, and had moved from being a 'flexible reserve' which was requested to take action into an essential part of a coalition fleet under its commander's orders. After another

strike day on 20 April 1945, TF 57 sailed for san Pedro Bay in Leyte Gulf to meet the Fleet Maintenance Group and replenish. It had been at sea on operations for 32 days continuously, the longest sortie any British fleet had undertaken since the days of sail.

On 1 May, TF 57 sailed for further strikes against the Sakishima Gunto where it followed the same routine as before and continued to be subject to Kamikaze attacks. *Formidable* was hit on 4 May and damaged after the battleships and cruisers left the screen to bombard airfields with gunfire. This considerably reduced the number of anti-aircraft guns in the screen to defend the carriers against the combat air patrol. *Formidable* was damaged again on 9 May by a Kamikaze and again on 18 May when one of her aircraft's guns were fired accidentally in the hangar, writing off 30 aircraft in the ensuing fire. She left for urgent repair work in Sydney on 22 May followed by the remainder of the BPF on 25 May, arriving in early June. During ICEBERG, the fleet had spent 62 days at sea with a break of 8 days in Leyte Gulf. Aircraft from 5 fleet carriers had flown 5335 sorties, expended 1000 tons of bombs, 500,000 rounds of aircraft ammunition and 950 three-inch aircraft rockets. Forty-two enemy aircraft had been destroyed in the air and over 100 on the ground had been claimed and, most importantly, the enemy had been prevented from staging aircraft through the Sakishima Gunto to Okinawa by day and 186 small vessels whose total tonnage was estimated at 30,000grt were either sunk or damaged beyond repair. The cost of the BPF's first Pacific operations was not light, 160 aircraft were lost in the air, in accidents or to Kamikaze damage. Twenty-nine 'flyable duds' were returned to the Fleet Air Maintenance Group in return for 173 replacement aircraft out of the 213 spare aircraft brought forward in replenishment and ferry carriers from Australia via Manus.[12] Forty-four men were killed in ships, most in Kamikaze attacks and 41 aircrew had been lost. All four remaining carriers needed dockyard repairs on their return to Sydney to make good two months' wear and tear as well as the damage inflicted by the enemy.

The only action by the BPF in June 1945 was Operation INMATE, a series of strikes by HMS *Implacable* and a battle group largely made up with ships that had recently arrived from European waters against Truk Atoll in the Caroline Islands. Once important as an advanced Japanese fleet base, these had been bypassed by the Americans, and INMATE was a training operation intended to work up the new air group to operational efficiency under Pacific conditions. On its completion, *Implacable* moved to Manus to continue her work-up and await the remainder of the fleet which joined her at the beginning of July. By then the US Pacific Fleet command had changed and the 5th Fleet became the 3rd Fleet under Admiral Halsey. The BPF was re-designated as TF 37 and formed an integral part of the 3rd Fleet, a remarkable achievement after less than six months experience in Pacific operations.[13]

For operations off the coast of Japan itself, an aircraft carrier squadron now comprised *Formidable* as flagship and *Victorious, Indefatigable* and *Implacable*. *Indomitable* remained in Sydney for a refit after which she was to become flagship

of the newly arrived 11 aircraft carrier squadron comprising the light fleet carriers HM Ships *Colossus*, *Venerable*, *Vengeance* and *Glory*. Like *Indefatigable*, *Implacable* had 2 squadrons of Seafires in its air group, the 2 ships together embarking a total of 88 of these fighters. Hitherto, the Seafire had been employed solely on defensive missions because of its short radius of action but now that it was the most numerous single type, providing nearly a third of the total BPF embarked strength, it was essential that some means of extending its range be found. Fortunately, the two fighter wings, working quite separately, were able to improvise fittings to their Seafires enabling them to carry large, external fuel tanks with which they could carry out 'ramrod' and strike escort missions as well as fleet combat air patrols. Even by carrying more fuel outside, rather than inside the airframe, however, the Seafires still lacked the 'legs' of the superb Corsairs embarked in *Victorious* and *Formidable*, even when these American built fighters were carrying a 1000lb bomb load.

Operations began on 17 July 1945, but were hampered by bad weather that included typhoons. Despite this, the Corsair squadrons dropped more than 14 tons of bombs in 2 days. The familiar cycle of two strike days followed by two replenishment days was followed and, with growing experience, things worked a little more smoothly. On 24 July, six Avengers, two Corsairs and two Fireflies found and attacked a small Japanese escort carrier believed to be IJS *Shimane Maru*, the only occasion on which RN aircraft attacked an aircraft carrier during the war. They left her afloat but on fire with her back broken to be sunk later by US naval aircraft. Four hundred and sixteen sorties were flown on that one day, 261 of them offensive. Targets included shipping in the Inland Sea and the interdiction of airfields and railways in the area between Nagoya and Tokyo. TF 37 withdrew to replenish on 30 July, a process which was slowed by further typhoons which caused a great deal of damage to the wooden flight decks of US carriers but elicited the reply 'what storm' from Rawlings when Halsey asked how his ships were faring; showing how the Pacific Fleet's confidence had grown.

The Allied fleets were ready for action again on 3 August 1945, but were ordered to keep clear of southern Honshu until after the first atomic bomb had been dropped on Hiroshima on 6 August. Bad weather prevented flying on 8 August but strikes were launched against northern Honshu on 9 August. On this day, BPF aircraft dropped a greater tonnage of bombs than the RN had dropped on any other single day in World War II and Lieutenant Robert Hampton Gray, RCNVR, earned the second Victoria Cross to be awarded to a Fleet Air Arm pilot during the conflict. He was the senior pilot of 1841 Naval Air Squadron in *Formidable* and was leading the carrier's second bomb-armed fighter sweep of the morning, Ramrod 3A, when he saw the Japanese escort destroyer IJS *Amakusa* anchored in Onagawa Wan and attacked it. Despite being hit and set on fire by flak, he hit the ship with at least one of his bombs which caused it to sink before crashing into the sea nearby and losing his own life.

By 10 August 1945, carrier aircraft were able to roam at will over Honshu destroying military installations, aircraft and what remained of the enemy's transport systems. On that day alone over 50 enemy aircraft were destroyed by TF 37 fighters out of over 700 by the combined carrier task forces. Admiral Halsey now decided to stay beyond the planned last date for this phase of operations, which had never been given a code name, in order to pin down any Japanese air forces that might otherwise be deployed onto the enemy's new front against the Russians. The US Navy Fleet Train had grown to the extent that he could support such a change with relative ease but the BPF's smaller logistical group had insufficient fuel to keep the whole of TF 37 in action and there were no replacements for the general shortage of stores. Generously, the US Navy agreed to provide fuel for a token British force to be 'in at the kill' but *Formidable*, *Victorious* and *Implacable* had to return to Sydney. This left *Indefatigable* which had missed the first series of strikes and was, therefore, better equipped with stores to form a new Task Group 38.5 together with the battleship HMS *King George V*, some cruisers and a destroyer flotilla. There was considerable disappointment in the other carriers when it was clear that the end of the war was near but the logistical logic was inescapable and the joyous reception the ships received when they returned to Australia later in August was more than adequate compensation.

Dawn strikes were launched from *Indefatigable* on 15 August 1945 and led to the last fighter combat of the war when a dozen Zeros intercepted a flight of Avengers.[14] They in turn were taken on by 10 Seafires of 24 Naval Fighter Wing which shot down 8 of the enemy for the loss of one of their own, piloted by Sub Lieutenant 'Freddie' Hockley, RNVR, who parachuted safely to the ground but was murdered by Japanese troops at noon. At 0700, all strikes were recalled following the announcement of the cease fire that ended the Pacific War.

British and Dutch submarines had operated against the Japanese from bases in the Indian Ocean and from September 1944, the 8th Flotilla moved to Fremantle, Western Australia, where it was placed under the operational control of the Commander Submarines 7th Fleet. The US Navy had repair facilities for its own boats there and the British boats benefited from access to the RAN victualling yard and armament depot not to mention the extraordinary hospitality of the local population. In March 1945, the 8th Flotilla moved to Subic Bay in the Philippine Islands together with its depot ship HMS *Maidstone*. Its place at Fremantle was taken by HMS *Adamant* with the 4th Flotilla. Both flotillas became part of the BPF on 1 April 1945, but continued under US operational control.[15] Submarines, backed by the operations of the Allied surface fleets and their air arms formed part of a three dimensional blockade of Japan that cut off the mainland from virtually all external supplies of raw materials, fuel and food. Regardless of bombing and amphibious assault, the blockade would have brought Japan to the point of starvation and collapse by the spring of 1946.

Mines laid by aircraft, submarines and surface ships formed another element of the blockade and the RN deployed three fast minelayers to the Far East but they arrived too late to see much active service. Considerable numbers of minesweepers began to arrive in the BPF by Victory over Japan Day, but saw most use post-war to clear the many minefields that were a hazard to the return of peacetime shipping. The RAN's *Bathurst* class minesweeping corvettes of the 21st and 22nd minesweeping flotillas were allocated to the BPF and used as part of the Fleet Train. Their main task was escorting replenishment tankers on passage to and from the US bulk fuel installations at Eniwetok. Four of these ships representing both flotillas were with the RAN contingent in Tokyo Bay on 2 September 1945 to witness the surrender ceremony.[16]

As soon as hostilities ended, ships of the BPF were used for a number of immediate tasks including the relief of Hong Kong where maintenance ships proved especially useful in restoring the rundown civilian infrastructure including power stations. Carriers landed their aircraft, filled the hangars with bunks and extra messing arrangements and carried former prisoners of the Japanese home to Australia and Canada. They were also used to return troops and *Implacable* entered Sydney Harbour on 15 November 1945 with 2126 soldiers of the 7th Australian Division on board which it had brought from Balikpapan. Whilst on passage she had passed through the Prince of Wales' Channel in the Torres Strait at the tip of Cape York in northern Queensland. She was the largest ship to have done so at the time and for the next three days she sailed down the east coast of Australia inside the Great Barrier Reef, giving her passengers a lasting memory. In 1946, the BPF remained a powerful force, which showed the flag with visits to Australian, New Zealand and Chinese ports. Sailors from throughout the Commonwealth took part in victory parades and many other notable events before the fleet was run down.

Conclusion

The British Pacific Fleet achieved its aim and ensured that a British admiral was present to sign the Japanese surrender document onboard the USS *Missouri* in Tokyo Bay on 2 September 1945. He was there by right with his flagship, HMS *Duke of York*, close by allowing him to act as host to notable Allied leaders. In retrospect, the BPF can be seen as a role model for the seamless integration of the Commonwealth navies to achieve a strategic result greater than the sum of their individual contributions. They had played a significant part in the most powerful demonstration of sea power in the modern era. The mutually supporting three dimensional blockade had brought Japan to its knees and reduced the large, and in some cases undefeated, Japanese armies in China and on island bases into virtual prisoners unable to return and fight in defence of their homeland. Japanese air forces were unable to oppose the carrier-borne aircraft that operated at will over the heart of the Japanese Empire.

Contemporary fleet operations contain many features that are a legacy from the BPF, not least the ability to replenish under way and poise task forces for considerable periods at sea until needed. The ability to combine assets and communicate within a coalition force is so much taken for granted now that the fact that it was not always straightforward has almost been forgotten. The spirit of 'make do and mend' showed what could be achieved in a short time and was reflected in the British achievements during the Falklands War in 1982. The BPF showed the United States that it had loyal allies that were capable of coming together to stand by it, not as a subservient force but as equals ready to learn but with their own ideas and high standards, even in the most intense and technically advanced form of warfare yet seen. This capability was demonstrated again only five years later in the Korean conflict and on many occasions since. I hope that it still has relevance in the 21st century.

The remarkable achievements of the BPF were due to the close cooperation of the Commonwealth navies. They were impressive by any yardstick, deserved success and set standards of which we can all be justly proud. The only memorial dedicated solely to the British Pacific Fleet is, fittingly, now mounted on a wall inside the RAN Fleet Headquarters in Sydney. It was originally erected by the Naval Historical Society of Australia in 1973, a few yards away near the site of the Fleet's wartime headquarters and comprises a tread-plate and badge taken from *Duke of York* when it was scrapped in 1958. It visibly commemorates the most powerful fleet ever deployed by the British Commonwealth and the seamless cooperation between equal partners that made it possible.

Notes

1.   HP Willmot, *Grave of a Dozen Schemes: British Naval Planning and the War against Japan 1943-45*, Naval Institute Press, Annapolis, 1996.

2.   Willmot, *Grave of a Dozen Schemes*.

3.   David Stevens (ed), *The Royal Australian Navy in World War II*, 2nd edn, Allen & Unwin, Crow's Nest, 2005.

4.   David Hobbs, *Moving Bases: Royal Navy maintenance carriers and MONABS*, Maritime Books, Liskeard, 2007.

5.   Joint Administration Planning Sub Committee, *Potentialities of Australia as a Base for Royal Navy Forces*, 1/44, 20 November 1944.

6.   Hobbs, *Moving Bases*.

7.   DK Brown, *Nelson to Vanguard: Warship Design and Development 1923-1945*, Chatham Publishing, London, 2000.

8.   Hobbs, *Moving Bases*.

9.   D Stevens (ed), *The Royal Australian Navy: The Australian Centenary of Defence Volume III*, The Oxford University Press, Melbourne, 2001.

10. Peter Smith, *Task Force 57: The British Pacific Fleet 1944-45*, William Kimber Ltd, London, 1969.

11. David Hobbs, 'The British Pacific Fleet', in David Brown (ed), '*The Forgotten Fleets' 50th Anniversary Papers*, Brodie Publishing, Liverpool, 1995.

12. David Hobbs, *A Century of Carrier Aviation*, Seaforth Publishing, Barnsley, 2009.

13. Hobbs, *A Century of Carrier Aviation*.

14. Thus, the Royal Navy engaged successfully in both the first fighter combat in September 1939 and the last on 15 August 1945 in very different locations.

15. WJR Gardner, *Submarines in the BPF*, Brodie Publishing, Liverpool, 1995.

16. HP Willmott, *The Royal Australian Navy in the BPF*, Brodie Publishing, Liverpool, 1995.

7 The South African Navy and its Predecessors 1910-2009

André Wessels

Compared with major Commonwealth navies like the Royal Navy (RN) and the navies of Australia, Canada, India and Pakistan, the South African Navy (SAN) is very small.[1] Yet its history dates back to at least 1922; and even before that, South Africans served in the RN in World War I (WWI). Proceeding from the assumption that the SAN and its predecessors played a vital role in safeguarding the strategic Cape sea route in the interest of the Commonwealth, as well as of the western world, the aim of this study is to provide a brief review of the chequered history of the SAN and its predecessors, with the emphasis on interaction with Commonwealth navies (31 May 1910 to 31 May 2010). Questions that will be addressed include the following: why did South Africa only receive its first naval force in 1922, that is, 12 years after the establishment of the Union of South Africa? What role did South Africa's naval forces play during World War II (WWII)? To what extent was contact with Commonwealth navies limited to the RN, and why? What were the implications of the so-called 'war years' (1966-89) for the SAN? How have the political changes brought about by the advent of the so-called 'new South Africa' in 1994, affected the navy, and in particular its relations with other Commonwealth countries? Where possible, parallels will be drawn between developments in the SAN and developments that took place in the navies of other Commonwealth countries.

The Establishment of Naval Forces for South Africa and Their Role Until 1945

After the Dutch East India Company had established a refreshment station in 1652 in the region that in due course became Cape Town and the Cape Colony in South Africa, the area remained under Dutch control until the British occupied the Cape Colony in 1795. With the exception of the years 1803 to 1806 (when the cape was under Dutch Batavian rule), Britain controlled the strategically important Cape sea route until the Union of South Africa (comprising the four British colonies, namely the Cape Colony, Orange River Colony, the Transvaal and Natal) was established on 31 May 1910.[2] There was no need for the coastal regions (that is, the Cape Colony and Natal) to form their own naval forces, as the RN defended the Cape sea route and adjacent areas, from their naval base in Simon's Town, and this continued to be the case even after Unification in 1910, when the RN retained this strategic base.[3] However, there was a South African Division of the Royal Naval Volunteer Reserve. The Volunteer Reserve was established in the United Kingdom in 1903, and the South African Division, which came into being on 1 July 1913, was formed by amalgamating the Natal Naval Volunteers (founded in 1885) and the Cape Naval

Volunteers (founded in 1905).[4] This followed after the establishment of the Union Defence Forces on 1 July 1912 (by virtue of the *South African Defence Act*; Act No 13 of 1912, proclaimed on 14 June 1912), which made provision for the establishment of a permanent force, a coast garrison force, a citizen force and a Royal Naval Reserve, but for the time being there was no navy (and the air force would follow in 1920).[5] However, there was some naval interaction between South Africa and other British or former British territories. For example, in 1913 two new Australian warships, the battlecruiser HMAS *Australia* and the light cruiser HMAS *Sydney*, sailed from where they had been built in Britain via South Africa to Australia, visiting Cape Town and Simon's Town (26-29 August 1913); and *Australia* also visited Durban (31 August - 6 September).[6]

During WWI, South African Division Naval Reserve members served in the South West African campaign (when Union Defence Forces conquered German South West Africa, today Namibia). They also operated ships that patrolled South Africa's coasts against German surface raiders and helped to clear up the mines laid by the surface raider *Wolf*. A total of 164 members (5 officers and 159 ratings) served in the RN in the course of the conflict, seeing action in many theatres of operation, including the Dardanelles campaign, and in that sense cooperated with other members of the British Empire. There were also South Africans who made a career of serving in the RN and Royal Naval Air Service, including Captain (later Vice Admiral) VB Molteno, who was the commanding officer of the armoured cruiser HMS *Warrior* during the Battle of Jutland. The RN's strategic Simon's Town Naval Base was, of course, of great importance to the Allies during the war. A total of 412 South Africans, including 24 officers, served in the South African Division Naval Reserve during the war. Of these, one officer and eight ratings died; and the RN acknowledged South Africa's role in the RN's/Allied war effort by giving some of their ships South African names: the destroyer-leader *Botha* (1915), destroyer *Springbok* (1917), light cruiser *Durban* (1921) and light cruiser *Capetown* (1922).[7]

After the war, South Africa's Prime Minister, General Louis Botha, was determined that South Africa should establish its own fulltime navy. He died on 27 August 1919 and was succeeded by General Jan Smuts, who, at the 1921 Imperial Conference in London, agreed with the British Government that South Africa should indeed acquire its own navy. On 1 April 1922, South Africa's first naval force came into being with the establishment of the South African Naval Service, which had at its disposal a small hydrographic survey ship, HMSAS *Protea* (an ex-RN minesweeper), and two minesweeping trawlers (also ex-RN ships). However, the Great Depression (1929-33) and other factors led to the virtual demise of the South African Naval Service – *Protea* was withdrawn from service in 1933, and both trawlers were withdrawn during the next year.[8] Compare this state of affairs with the situation that prevailed in, for example, Australia – a country that in 1922 already had a relatively large navy (established on 1 March 1901 as the Commonwealth Naval Forces) with 3 light cruisers, 12 destroyers, 3 sloops, 1 submarine, 1 torpedo boat, 3 depot ships and 2

other auxiliaries.[9] In the case of New Zealand, the New Zealand Division of the RN was established in 1921, and had two light cruisers in 1922.[10] In the meantime, the British Commonwealth developed from the Imperial Conferences, with Britain and its Dominions acquiring equal status in the British Commonwealth of Nations in 1926 – a relationship formalised by the *Statute of Westminster 1931*.

By the time WWII broke out on 1 September 1939, the South African Naval Service amounted to little more than a nominal naval organisation, with only two officers and three ratings and, obviously, no warships.[11] In comparison, when the war broke out, the personnel of the RAN numbered 5440, with 6 cruisers, 5 destroyers, 3 sloops, 1 depot ship and 1 other auxiliary; while the New Zealand Division of the Royal Navy had about 1340 personnel (of whom some 46 per cent were RN), 2 cruisers and 1 minesweeper.[12] In the white Afrikaans-speaking community, there were strong sentiments against the prospect of South Africa entering the war on the side of Britain, in fact there was even some support for Nazi Germany; but on 4 September 1939, the whites-only Parliament decided (with 80 votes to 67) to participate. Two days later, war was declared against Germany.[13]

Almost from the start of hostilities, German surface raiders, submarines and mines threatened the Cape sea route, as did Italian and Japanese submarines in due course. A total of 155 merchant ships (of 885,818 gross tons) were sunk within a radius of 1000nm from the coast of South Africa and South West Africa (133 of these merchant ships – totalling 743,544 gross tons – were sunk off the coast of South Africa), while only 3 enemy submarines were sunk in that area.[14] The South African Naval Service was soon built up again, acquiring several minesweepers and small anti-submarine vessels (all of which were either converted trawlers or whale-catchers). As from 15 January 1940, the South African Naval Service became known as the Seaward Defence Force, and took over the minesweeping activities off the South African coast from the RN and South African Division Naval Reserve; in due course, it was also responsible for anti-submarine operations in South African coastal waters. From January 1941 onwards, a number of South African anti-submarine trawlers served in the Mediterranean. On 1 August 1942, the Seaward Defence Force and the South African Division Naval Reserve amalgamated to form the South African Naval Forces, which continued to safeguard the strategic Cape sea route as best they could, launching anti-submarine operations, minesweeping operations (German surface raiders laid several mine-fields), and convoy escorts.[15] In October 1943, the South African Women's Auxiliary Naval Service was established.[16] Political considerations of the day precluded 'non-white' South Africans from fighting in uniform, but many did serve, mostly as non-combatants, on board the navy's 'little ships', for example as cooks and general deck hands.[17]

After the conclusion of the war in the European theatre of operations, the navy sent two of its ships to the Far East to serve in the continuing war against Japan, while two RN ships, which were wholly manned by South Africans, also served in that war sector.[18] At least 2937 South Africans served in the RN during the war, of

whom 191 died in active service. These South Africans served on board RN ships in all theatres of operations, and they cooperated with other Commonwealth naval personnel, including in the struggle against Japan.[19] By the time the war ended, 1436 officers and 8896 ratings (of whom 324 were killed in action or died in service) had served in South Africa's naval forces; and in the course of the war, 87 vessels had been in service, including three Loch class frigates – the first major warships acquired by the navy.[20] South African ships and/or sailors had served in all naval operational areas, and had played a small but meaningful role in the defeat of the Axis powers, cooperating closely with the RN and the navies of the other Commonwealth countries. During the war, approximately 1000 warships visited both Cape Town and Durban, including warships from Commonwealth countries.[21] In addition, approximately 400 convoys and 50,000 ships with about 6,000,000 Allied (mostly Commonwealth) troops visited South Africa on their way to or back from the operational areas in North Africa, the Mediterranean and the Far East.[22] Once again, Simon's Town was also of great importance, and many Allied, mostly Commonwealth, warships visited its docks. Moreover, many warships were repaired in Simon's Town, including the Australian heavy cruiser, HMAS *Canberra* (I) (after problems were experienced with one of her propellers), at the end of July in 1940.[23]

The Prosperous Years, 1945-66

After the end of WWII, the South African Naval Force – in line with most other navies – decreased drastically in size. On 1 May 1946, it was reconstituted as a permanent part of the Union Defence Forces, with an authorised establishment of 60 officers and 806 ratings; but by that stage, it only had 3 frigates, 1 small minelayer, 2 boom defence vessels, and 11 very small harbour defence motor launches.[24] Its base, as from 1948, was the one that had been built for the RN on Salisbury Island in Durban during the war, after the fall of Singapore. In 1947, the navy acquired three RN ships: a corvette (to be converted into a hydrographic survey ship) and two fleet minesweepers (one of which was Canadian-built).[25]

In May 1948, the National Party came to power, and soon started with the implementation of its racially-based policy of separate development (apartheid), which in due course not only harmed millions of black, coloured and Asian South Africans, but also the country's foreign relations, including those with Commonwealth countries.[26] This in turn affected naval relations. However, for the time being, South Africa still had strong ties with the Commonwealth and with western powers in general, because in the course of the 1950s and 1960s, the Cold War became more intense, and the West needed the support of South Africa in order to safeguard the strategic Cape sea route. On the other hand, South Africa was not only prepared to assist the West in the struggle against communism, but the National Party government also wanted to strengthen the Union's position as an important regional power.

In the years 1945 to 1966, the South African Naval Force (and later SAN) sent its ships (which can be referred to as 'grey diplomats') on many flag-showing cruises. During these years, most of the visits were made to ports in Angola and Mozambique, both Portuguese colonies until 1975.[27] However, there were a few exceptions, perhaps the most noteworthy being the visit to Australia in 1951. The Loch class frigate HMSAS *Transvaal* (under the command of Lieutenant Commander James Johnson, later Chief of the SAN) departed from her base in Durban on 26 December 1950, called at the meteorological station on Amsterdam Island (to this day still a French possession), and arrived at Fremantle on 10 January 1951. From there, the ship sailed to Sydney to take part in the two-week-long Australian Jubilee Celebrations. On arrival in Sydney on 29 January, *Transvaal* took part in exercises with ships of the British, Australian, New Zealand, Indian and Pakistani navies. The South African ship subsequently visited Jervis Bay, Melbourne, Adelaide and, once again, Fremantle, before returning to South Africa, arriving back in Durban on 4 March 1951, albeit minus seven of her crew, who had gone missing. (Four had left in Melbourne, two in Adelaide and one in Fremantle. Five had been offered lucrative employment opportunities, while two had fallen in love). This was the longest and most ambitious flag-showing cruise that had been undertaken by the navy since its inception, and the epic voyage was a resounding success underlining the important role that navies can play in diplomatic relations.[28] While this grey diplomat was away, the South African Naval Force was renamed as the South African Navy, on 1 January 1951.[29]

In 1950 the South African Naval Force took delivery of its first destroyer, an ex-RN W class ship, followed by a sister ship in 1953.[30] On 20 June 1952, the prefix of all South African naval ships was changed from 'HMSAS' to 'SAS', reflecting the growing Afrikaner nationalism since the National Party had come to power. In 1954, the SAN acquired a Ford class seaward defence boat from Britain, and during that same year, the South African and British Governments started negotiations on the future of the RN's base at Simon's Town.[31] The Simonstown Agreement was concluded in 1955. In accordance therewith, South Africa undertook to expand its navy by purchasing an additional six frigates (in practice, only four frigates were acquired), ten coastal minesweepers and another four seaward defence boats (that is, over and above the one seaward defence boat already acquired in 1954) from Britain, and the Simon's Town Naval Base was formally transferred to South Africa on 2 April 1957. However, according to the Agreement, Britain, the other Commonwealth countries and allies could still use the base facilities; the RN had a frigate permanently stationed there until 1967.[33] Although the Commonwealth Office had reservations about handing over the Simon's Town Base to South Africa, and although the National Party government had a political rather than a strategic naval agenda with regard to its endeavours to acquire the base, this step did, in fact, eventually lead to the expansion and development of the SAN. The Agreement also stipulated that in any conflict involving both South Africa and Britain, the RN's commander in chief would have full command of all SAN forces.[33]

In the light of the Cold War and the threat posed by the Soviet Union to the Cape sea route, it was very important that the Commonwealth navies (as well as NATO) should have access to such a relatively large and sophisticated base like the Simon's Town Naval Base. After WWII, South African Naval Force ships regularly exercised with RN ships, and also sometimes with visiting warships from France and Portugal (which had come from the naval bases in their African colonies), as well as from the United States. The exercises were initially called the Durban Exercises. After the SAN moved to Simon's Town in 1957, they were known as the Cape Exercises, until 1965, when the RN requested that they should be called Weapons Training Periods. Later, they were referred to as the South African Naval Exercises.[34] Thus, interaction with Commonwealth navies was still limited to cooperation with the RN; but this cooperation was of considerable importance. After 1957, many RN warships continued to visit Simon's Town, as well as other South African ports; and there were also sporadic visits by grey diplomats from other countries, such as the Netherlands, the United States and France, as well as a visit by a Spanish sail-training ship, and two visits by warships from other Commonwealth countries: the Canadian (ex-RN Colony class) light cruiser HMCS *Quebec* (Cape Town, 1953 – 44 years would elapse before another Canadian warship would visit South Africa, namely HMCS *Halifax*, in 1997) and the Pakistani frigate *Tippu Sultan* (ex-RN O class destroyer) in 1956.[35]

From 1955 to 1959, the SAN commissioned ten Ton class coastal minesweepers and four Ford class seaward defence boats that it had bought from Britain, and on 29 November 1956 the frigate SAS *Vrystaat* (a converted ex-RN W class destroyer) was commissioned.[36] These and other SAN ships took part in many flag-showing cruises.[37] In the meantime (until 1959), the Australian and New Zealand navies took part in the Korean War (1950-53; the South African Air Force also took part). In addition, the RAN acquired two aircraft carriers (1948 and 1955), implemented its 'long haul' and 'forward defence' policies, and acquired five destroyers. After gaining independence in 1947, India acquired 2 cruisers, 5 frigates and, in due course, also 1 aircraft carrier; Pakistan acquired 1 cruiser and 9 destroyers; New Zealand obtained 2 cruisers and 6 frigates; and Canada acquired 1 aircraft carrier, 3 destroyers and 17 frigates that had been locally designed and built.[38]

The year 1960 was a turbulent one in the history of South Africa. The most important events included British Prime Minister Harold Macmillan's 'Wind of Change' speech, the riots in Sharpeville and other so-called townships (which led to protests in many countries against South Africa), the banning of the African National Congress and Pan-Africanist Congress, and the referendum during which the white electorate – by a small majority – voted in favour of their country becoming a republic.[39] In March 1961 the South African Prime Minister, Dr HF Verwoerd, went to Britain to attend the annual Commonwealth conference, with the intention of requesting permission for his country to remain in the Commonwealth after becoming a republic (as was the case with India). Australian Prime Minister Sir Robert Menzies believed in non-

interference in domestic policies of fellow Commonwealth member states, and New Zealand Prime Minister Keith Holyoak supported him to some extent. However, when certain Commonwealth representatives, led by Canadian Prime Minister John Diefenbaker, sharply criticised the South African Government's apartheid policy, Verwoerd withdrew South Africa's application for continued membership on 15 March 1961. Therefore, on 31 May 1961, South Africa became a republic outside of the British Commonwealth.[40] However – at least for the time being – this did not impact negatively on the Republic of South Africa's naval relations with the RN or other countries. Flag-showing visits by SAN warships continued, and South Africa continued to welcome many foreign grey diplomats to its ports. These were mostly RN warships, but there were also some visiting ships from the navies of the United States, Portugal, France, Italy and Spain.[41] In the meantime, the SAN commissioned three new Type 12 frigates (1962-64); at that stage the largest ships in the navy.[42]

Meanwhile, many African countries had become independent, changing the face and character of the continent and to some extent also that of the Commonwealth; and their attitude towards South Africa hardened. Internationally, South Africa was gradually becoming a pariah state. In 1963, the United Nations Security Council approved a voluntary arms embargo against South Africa, and when the Labour Party came to power in the United Kingdom in 1964, South Africa's oldest naval ally decided that it would henceforth supply no further arms to that country. Nevertheless, up until the late 1960s, South African naval officers and ratings were still welcome to attend RN training courses.[43] However, in the meantime, 'storm clouds' were brewing in South West Africa.

The 'War Years', 1966-89

In 1914-15, during the first few months of WWI, South African forces defeated the German forces in what was then known as German South West Africa. On 17 December 1920 this territory, henceforth known as South West Africa, became a Class-C Mandate under the administrative control of South Africa, albeit that in practice it was governed as if it were a fifth province of the Union. In due course, many members of the local black population, which outnumbered the white population by about 10:1, began to agitate for independence. In 1960, the black inhabitants of South West Africa found an important mouthpiece when the South West African People's Organization was established. In due course, this organisation resorted to the taking up of arms against what they regarded as the unlawful South African occupation force in South West Africa, and on 26 August 1966, the first clash between organisation cadres and South African security forces took place at Ongulumbashe in the far north of the territory.[44] Over the course of time, a full-scale guerrilla conflict ensued in north South West Africa, which spilled over into Angola (from whence the cadres launched most of their attacks). The conflict became intertwined with the liberation struggle (and later civil war) in Angola, and culminated in a conventional conflict in Angola, in which thousands of Cuban soldiers, as well as advisors from many other countries, were also involved.

The South African Defence Force mainly deployed the South African Army (that is, ground forces) 'up north', supported by aircraft and helicopters of the South African Air Force, and with members of the South African Medical Service playing an important role in evacuating and treating casualties. The navy's role in the conflict was ostensibly very small, and yet – as will be pointed out in due course – it was in reality quite significant.[45] However, of greater importance in terms of the navy's history, is the fact that during (and because of) these war years, the composition and navy's role gradually changed, as did South Africa's international position, which had far-reaching consequences for naval cooperation between South Africa and Commonwealth (and other) countries.

By 1966, the National Party government was implementing its racially discriminatory policy of apartheid more vigorously than ever before, with BJ Vorster as the Prime Minister from September 1966 (in the place of the murdered HF Verwoerd), and PW Botha as Minister of Defence from April 1966. International pressure was mounting against South Africa, but the navy still enjoyed normal interaction with the navies of most Western countries. Examples in this regard include, *inter alia*, the navy's flag-showing visits (which will subsequently be discussed in more detail), as well as similar visits to South African ports by foreign warships, often with concomitant joint exercises. When the Six Day Arab-Israeli War (1967) led to the closure of the Suez Canal (1967-75), it also led to an increase of commercial traffic around the cape, while many more foreign warships now also used the Cape sea route, often calling at one or more South African ports. For example, in 1968 at least 44 RN (and auxiliary) ships visited Simon's Town; in 1969 there were at least 39 such visits; in 1970 at least 36 visits; and in 1971 at least 50 visits.[46] Most exercises involved RN ships (and sometimes a submarine), but ships from the following countries also participated from time to time:

- France – until 1960 France had many African colonies, and thereafter still a few possessions. France was determined to make its influence felt on the continent, especially in the Indian Ocean.

- Portugal – the oldest colonial power in Africa. Until the mid-1970s, Portugal was determined to cling to its colonies, notwithstanding the fact that it had to fight anti-guerrilla wars in Portuguese Guinea, Angola and Mozambique.

- United States – in the context of the Cold War, the West's only superpower in the struggle for world domination, and was determined to ensure that the strategic Cape sea route would not fall into Soviet hands, or come under their influence. However, when the aircraft carrier USS *Franklin D Roosevelt* visited Cape Town in February 1967, black sailors were not allowed to go ashore (because under apartheid laws they could not be guaranteed equal treatment), and that put an end to American naval visits to South Africa for nearly three decades.[47]

In 1967, the SAN acquired the Danish oil tanker *Annam*, converted her into a replenishment (logistic/combat support) ship, and commissioned her as SAS *Tafelberg* – the first such ship in the navy.[48] Henceforth, the navy could deploy its other ships independently of foreign ports and over larger distances than ever before. This capability was successfully demonstrated when the tanker accompanied the frigates SA Ships *President Kruger* and *President Steyn* when they visited Argentinean ports for the first time in October-November 1967.[49] While new naval ties were forged in South America, the navy's grey diplomats continued to strengthen existing ties with Portugal, by undertaking several flag-showing cruises to Angolan and Mozambican ports.[50]

Over and above the visits by RN ships already referred to, 1968 also brought two other very significant Commonwealth grey diplomats (albeit that they were painted black) to South African shores. The first was the Pakistani *Tench* class submarine *Ghazi* (ex-USS *Diablo*), which was in Simon's Town from 28 March to the beginning of April 1968, *en route* back from Turkey (where she had been refitted) to Pakistan.[51] In the meantime, the RAN decided to acquire six British-built *Oberon* class submarines. The second of these, HMAS *Otway*, visited South African ports on her delivery cruise, arriving in Cape Town at the end of July 1968, in Simon's Town on 27 August, and also visiting Port Elizabeth and Durban before crossing the southern Indian Ocean to Australia. The other five new Australian submarines sailed to Australia via the Suez Canal (one) or the Panama Canal (four).[52]

The above-mentioned courtesy visit by an Australian naval unit to South African ports was followed by the SAN's second (and, thus far, last) flag-showing cruise to Australian shores. A task force comprised of the frigates SA Ships *President Steyn* (238 crew members; Captain DK Kinkead-Weekes) and *President Pretorius* (238 crew members; Captain AC McMurray), and the replenishment ship *Tafelberg* (125 crew members; Captain RC Cousens) – all under the overall command of Commodore James Johnson (Senior Officer of the 10th (SA) Frigate Squadron) – left Simon's Town on 7 October 1968 for the long trip across the Indian Ocean to Fremantle (arriving on 23 October – departing on 26 October), Sydney (2-8 November), Melbourne (10-14 November) and back to Fremantle (18-21 November; *Tafelberg* anchored in bay). The task force arrived back in Simon's Town on 3 December 1968, having sailed 14,642nm in the course of their 58-day cruise.[53] In the meantime, a decision was made to convert the Type 12 frigates into Wasp helicopter-carrying ships (with a capacity of one helicopter per ship), with the conversions taking place from 1968 to 1977.[54]

In line with many other navies, South Africa decided during the course of the 1960s to acquire submarines, in order to enhance the strength of the navy. Several Commonwealth navies had already followed the same path, with Canada acquiring its first modern submarine in 1961 (having had two submarines from 1914-20), Pakistan in 1964, Australian 1967 (having had a few submarines in WWI, and in the 1920s to the beginning of the 1930s, and one for a short time during WWII)

and India in 1968.[55] As early as 1964, the South African cabinet decided to equip the SAN with submarines. The navy would have preferred to acquire British *Oberon* class submarines, in line with Canada and Australia, but when the Labour Party came to power in the United Kingdom in 1964, it decided not to supply any further arms to South Africa, although it did not (at least for the time being) curtail naval or other military contact. Consequently, South Africa ordered three *Daphné* class patrol submarines from France, commissioned as SA Submarines *Maria van Riebeeck* (24 July 1970), *Emily Hobhouse* (26 February 1971) and *Johanna van der Merwe* (27 August 1971). Each of the new submarines was escorted to South Africa by a Type 12 frigate, affording the navy an opportunity to show the South African flag in overseas ports, including those of the United Kingdom.[56]

In the meantime, the navy's new hydrographic survey ship, *Protea*, was commissioned at Glasgow on 23 May 1972, the last major warship ordered by the SAN from Britain.[57] This was made possible by the fact that the Conservative Party had come to power in 1970. After the delivery of *Protea*, the navy also received (in 1973) two small 22m air-sea rescue launches (merely known by their pennant numbers, P1554 and P1555).[58] However, in 1974 the Labour Party once again came to power, and all arms sales to South Africa were prohibited; as a matter of fact, even the delivery of the last of seven additional Wasp helicopters to the air force was cancelled.[59] The last major naval exercises involving the SAN and the RN took place in 1973-74. Firstly, a task force of the RN, comprising the nuclear-powered submarine HMS *Dreadnought*, a cruiser, three frigates and three support ships, visited South Africa *en route* to, and again on the way back to, the United Kingdom from the Far East (this was the first time that a nuclear-powered submarine had berthed in a South African port). Secondly, in August 1974, *Dreadnought* was back in South African waters, together with a destroyer, five frigates and three support ships, to exercise with the navy and air force. Finally, in October 1974, the nuclear-powered submarine HMS *Warspite*, accompanied by a cruiser, six frigates and three support ships, comprising the strongest RN task force to have visited South Africa in peacetime up to the present day, exercised with both the navy and air force.[60] However, this was also the last occasion for 20 years, on which RN ships would visit South Africa, because on 16 June 1975 the Simonstown Agreement was abrogated.[61]

In the meantime, a number of warships from the Netherlands, Argentina, France, Italy, Spain, Iran, Uruguay, Belgium, Thailand, Israel, Colombia and Germany navies visited South Africa. Further, five ships from Commonwealth countries, namely the French-built La Combattante II class missile fast-attack craft *Perdana*, *Serang*, *Ganas* and *Ganyang* from Malaysia (which arrived in Simon's Town on 5 June 1973 on their delivery cruise), and the British-built Kenyan patrol boat *Mamba* (which arrived in Simon's Town on 22 May 1974 on its delivery cruise, the first warship from an independent African country to visit South Africa).[62]

While all these developments were taking place, the war 'up north on the border' gradually intensified. Since 1966, the South African Police (assisted by air force helicopters) had been able to contain the South West African People's Organisation (SWAPO) incursions, but in light of the escalating conflict, the South African military took over the counter-insurgency operations in 1973. As long as there were pro-South African governments in Angola and Mozambique (both still governed by Portugal), and in Rhodesia (governed by the white minority under Ian Smith), South Africa had a physical buffer separating it from the rest of Africa, SWAPO, African National Congress and Pan African Congress found it difficult to infiltrate and attack targets in South West Africa and South Africa. However, in 1974 there was a regime change in Portugal and during the next year, Portugal withdrew from Mozambique (which became independent on 25 June 1975) and Angola (11 November 1975). South Africa now had pro-communist neighbours, and the navy's ships were no longer welcome in Mozambican and Angolan ports.

In Mozambique, the pro-communist *Frente de Libertação de Moçambique* (Mozambique Liberation Front) came to power in 1975, initially without any substantial opposition. In Angola, the pro-communist *Movimento Popular de Libertação de Angola* (Popular Movement for the Liberation of Angola) took control of the government in Luanda, but was opposed (especially in the rural areas) by the pro-Western *Frente Nacional de Libertação de Angola* (National Front for the Liberation of Angola) and *União Nacional para a Independência Total de Angola* (National Union for the Total Independence of Angola). In October 1975 South African ground forces, supported by the air force, and with the tacit support of the United States, invaded Angola in support of the pro-western factions, advancing rapidly, brushing opposition aside, and covering 3159km into the interior of Angola. However, when the South African forces were already in sight of Luanda, political and diplomatic considerations forced them to withdraw, with the last troops leaving on 27 March 1976.[63] Most of the fighting was carried out by the South African land and air forces, but the navy played a small but noteworthy and successful role. For the duration of Operation SAVANNAH, several navy units were deployed off the coasts of South West Africa and Angola, either as single units or as task forces, including two submarines, two frigates, several minesweepers, and *Tafelberg*. This was the first time since WWII that South African naval units had undertaken operational patrols. They were also on stand-by, in case army personnel had to be evacuated (indeed, *President Steyn* conducted the evacuation of troops off Ambrizete, north of Luanda), and to monitor the movement of Soviet Bloc ships that might have been transporting supplies to the communists.[64]

Strictly militarily speaking, the South African military was successful in Angola, but politically and diplomatically, South Africa was nose-diving. The navy received a somewhat late and reluctant invitation from the United States to send a warship to take part in that country's bicentennial independence celebrations in 1976. *President Kruger* was sent to New York; the first SAN ship to visit the United States,

and the last for 20 years.[65] While the frigate was still on passage to, riots broke out in the sprawling Soweto (black) township near Johannesburg, spreading to many other areas, and leading to the implementation of intensified measures by the apartheid regime to quell all opposition. This, together with the death in police custody of black-consciousness leader Steve Biko (12 September 1977), in turn led to the further isolation of South Africa, including the imposition of an all-embracing mandatory United Nations arms embargo (4 November 1977). This dealt the navy a serious blow, because the delivery of its two new Type-69A light frigates and two *Agosta* class submarines, all nearing completion in France, was embargoed.[66]

By the mid-1970s, many so-called coloureds were already serving in uniform in the navy, and when a training base for Indians was established on 15 January 1975, members from that community also joined in numbers, but black people were still barred from serving in uniform. In due course, more women would also serve in uniform in the navy. While the SAN gradually rid itself of apartheid's shades, South Africa as a whole was still firmly under the control of the National Party and its outdated policies. As the regime anticipated growing international isolation from the United Kingdom and other Commonwealth countries, it strove to acquire new allies. Links with Israel were established, and in 1977-78 three Reshef class missile-carrying fast-attack (strike) craft, built in Haifa, were commissioned by the SAN, followed by six similar craft built under licence in Durban, South Africa, and commissioned in 1978-80, 1983 and 1986.[67] The navy thus entered the missile age. In other naval developments, two of the navy's Ton class minesweepers were converted into patrol ships, while two others were converted into the navy's first mine hunters. For a brief period (1978-80), A331 (formerly the Department of Transport's Antarctic supply and oceanographic survey ship *RSA*, now simply known by her pennant number) was in naval service, and was apparently used for electronic surveillance along the coasts of Angola and northern South west Africa, in support of the war effort.[68] In the meantime, on the naval diplomatic front, the 'new' Pakistani submarine *Ghazi* (*Daphné* class *Cachalote*) visited Simon's Town at the beginning of 1976, on its delivery cruise from Portugal to Pakistan.[69]

After 1977, South Africa was almost totally isolated internationally, with condemnation of its apartheid policy, as well as of its so-called unlawful occupation of South West Africa and destabilisation actions in Southern Africa, emanating from various podiums, including the United Nations and the Commonwealth. In the meantime, the South West African Peoples Organisation, having acquired new base facilities in Angola, started to infiltrate South West Africa with ever-larger groups of guerrillas. The South African Government reluctantly ordered its defence force to launch cross-border operations, the first being Operation REINDEER (May 1978), which included the attack on Cassinga, which in due course led to much controversy.[70] Over the course of time, the Namibian War of Independence (1966-89) became inseparable from the civil war in Angola (1975-2002), with the conflict inside Angola developing from a semi-conventional war to a full-scale conventional

struggle, and with the defence force sometimes fighting pitched battles against the communist Angolan Government and their Cuban, Eastern European and Soviet allies. Indeed, Angola became one of the most important and tragic battlefields of the Cold War.

On 1 August 1980, *President Steyn* was withdrawn from service, henceforth to be used for spare parts. When *President Kruger* was recommissioned on 15 August 1980, after an extensive refit, the Chief of the SAN, Vice Admiral RA Edwards, made it clear that the frigate era in the navy's history was virtually something of the past. The navy had to adopt a new role: henceforth it would no longer defend the Cape sea route in the interest of the West, but would concentrate on safeguarding its own harbours and coasts, eventually becoming a small-ship force (with the strike craft being its backbone). The army-dominated Defence Headquarters used the war 'up north' as an excuse to drastically reduce the naval portion of the Defence budget (for example, from about 17 per cent to less than 9 per cent in 1979).[71]

To safeguard South Africa's harbours against sabotage by insurgents, 30 *Namacurra* class harbour protection boats were built locally (1979-81). They were operated by the marines, a branch of the navy that was resurrected in 1979 (having previously existed in 1951-55). One of the reasons for re-establishing the marines, was to acquire a greater role for the navy in the struggle 'up north' in South West Africa and in Angola. Hundreds of marines were sent to the Zambezi River, where for some distance, the river forms the border between South West Africa and Zambia, and at the furthest eastward point of the Caprivi Strip, also meets Botswana and Zimbabwe. Here the marines patrolled the Zambezi and surrounding areas.[72] In the meantime, the SAN also acquired four German-designed River class mine hunters, two of which had been built in Germany under the guise of research ships, and two in Durban. Their true identity only came to light in 1988.[73]

In 1980 Zimbabwe became an independent country recognised by the international community, but potentially hostile towards South Africa. On the home front in South Africa, the African National Congress' armed wing, Umkhonto we Sizue, intensified its armed struggle, while black-on-black violence also increased.[74] 'Up north', the South African Defence Force launched an extensive cross-border raid into Angola in August 1981 (Operation PROTEA), in which the organisation suffered huge losses. After this operation, the defence force did not withdraw all its troops from Angola, small units remained to disrupt the organisation's infrastructure. Other operations included DAISY (October to November 1981), SUPER (March 1982), PHOENIX (February 1983) and ASKARI (December 1983 to January 1984).[75]

In the meantime, the navy's larger surface units continued to undertake electronic and other patrols along both the west and east coasts of Southern Africa, sometimes in support of missions undertaken by special forces, strike craft and/or submarines. The lack of unclassified archival sources makes it impossible to give full credit to the navy for their military achievements in this regard. The role played by the navy in this

context must still (if possible) be thoroughly researched. However, there are a few references to these operations in a number of secondary sources.[76] Indirectly, South African submarines contributed greatly to the defence force's war effort, because they deterred the Soviet Union from sending a large intervention force to Angola.[77]

On 18 February 1982, the navy suffered its greatest (and most embarrassing) tragedy to date; 16 lives were lost when *President Kruger* sank after colliding with *Tafelberg*.[78] A similar incident had occurred 18 years earlier, entailing the loss of the Australian destroyer HMAS *Voyager*, with 82 lives, after it had collided with aircraft carrier HMAS *Melbourne* on 10 February 1964. Later, on 3 June 1969, *Melbourne* collided with and sank the destroyer USS *Frank E Adams*.[79] In 1985, 15 SAN ships (of which all but one were of British origin) were withdrawn from service in an effort to save money: the last remaining frigate, six Ton class mine countermeasures boats, five small patrol boats, a small survey ship, a boom defence ship and an air-sea rescue launch.[80] The only major acquisition during these years was the combat support ship SAS *Drakensberg* (commissioned on 11 November 1987), the largest ship thus far designed and built in South Africa. For two decades, she was the most important ship in the navy.[81] From 1985 to 1998, South Africa would have a 24-hull navy. In the meantime, the war 'up north' intensified. The pro-communist party, SWAPO, Cuban and allied forces launched several attacks against pro-western forces, which would not have survived without South African assistance. However, in August 1988, the last South African forces left Angola. Negotiations followed, which eventually also led to the withdrawal of South Africa from South West Africa (20 June 1989); and the latter territory finally became independent, as Namibia, on 21 March 1990.[82]

During the 23 years of conflict, the navy controlled the seas around southern Africa, deterred superpowers from intervening from the sea, and enabled the South African Army (supported by the air force) to project its power in areas such as the north of South West Africa and in Angola. The navy had played a small but very important role in bringing about a negotiated settlement in South West Africa and Angola (albeit that in the latter country, civil war flared up again and would drag on until 2002). However, the navy paid a high price: the costly war effort meant less money for the navy, which necessitated a scaling down of personnel and ships, and a change in naval policy. The 1989 navy was indeed a totally different navy from that of 1966, having lost all its major large surface combatants, and with them its anti-submarine warfare capability, and retaining only a limited anti-aircraft capacity. It is also interesting to note that, whereas in 1966 all 26 major units of the SAN were British-built, the origins of the 24 hulls that were in service in 1989 were diverse: five were British, three French, three Israeli, two German and one Danish, while no fewer than ten were locally built.

In the 1980s, there was an almost total naval isolation of South Africa, with only four overseas flag-showing visits by the navy, namely one by *Tafelberg* and a strike craft to Mauritius to help find the wreckage of a South African Airways jet that had crashed in 1987. Another was by *Drakensberg* and a strike craft to Chile (1988); and

two by *Drakensberg* to Mozambique to transport non-combat equipment in 1988.[83] There were six visits by warships from overseas countries to South African ports: two by Chile (1981 and 1988), three by Taiwan (1981, 1985 and 1989) and, interestingly enough, one by a Commonwealth country when the two new Malaysian light frigates, *Kasturi* and *Lekir*, visited Simon's Town for only approximately one day, for bunkers (October 1984), during their delivery cruise from Germany.[84] Otherwise, there was no formal naval contact with Commonwealth countries.

It is interesting to note that, while the South African Navy shrank in the years 1966 to 1989 (for example, in terms of major combat units, from two destroyers and six frigates to only three submarines), this was also true of the RN (which was reduced from 45 submarines, 5 aircraft carriers, 5 cruisers, 22 destroyers and 67 frigates to 30 submarines, 3 aircraft carriers, 13 destroyers and 33 frigates) and the Royal Canadian Navy, known from 1968 as the Canadian Forces Maritime Command (reduced from 2 submarines, 1 aircraft carrier and 33 frigates to 3 submarines, 4 destroyers and 15 frigates). On the other hand, the Royal New Zealand Navy's strength remained much the same (four frigates in 1966 and in 1989), the RAN's strength increased, owing to the acquisition of submarines (2 aircraft carriers, 8 destroyers and 11 frigates in 1966 to 6 submarines, 3 destroyers and 9 frigates in 1989), the Pakistan Navy was strengthened (from 1 submarine, 1 cruiser, 5 destroyers and 2 frigates, to 6 submarines, 7 destroyers and 8 frigates), while the Indian Navy's strength increased dramatically (from 1 aircraft carrier, 2 cruisers, 3 destroyers and 14 frigates to 17 submarines, 2 aircraft carriers, 5 destroyers and 19 frigates).[85]

From the Old to the New South Africa and Beyond, 1990-2010

Shortly after the Namibian War of Independence had ended, the South African Defence Force was drastically rationalised, particularly the army and air force, albeit that the navy also had to make additional sacrifices with regard to personnel.[86] The end of the 1980s and beginning of the 1990s heralded the end of the Cold War (and of the Soviet Union) and marked the start of a new era in South Africa's history, with the unbanning of several political organisations. Following this was the commencement of political negotiations, and the first truly democratic election of 1994, which brought a predominantly black political organisation (the African National Congress) to power. The South African Defence Force was transformed into a new South African National Defence Force, and on 17 July 1994, after an absence of 33 years, South Africa once again became a member of the Commonwealth.[87]

Whereas the navy remained at 24-hulls from 1986 to 1998, the end of the Cold War led to the drastic rationalisation of the RN (entailing a reduction from 32 submarines, 3 aircraft carriers, 13 destroyers and 36 frigates in 1990 to 17 submarines, 3 aircraft carriers, 12 destroyers and 22 frigates in 1994). Comparatively, the strength of the Canadian, Australian, New Zealand, Malaysian and Pakistani navies remained more or less the same, while the Indian and Singaporean navies increased in strength.[88]

With political changes in the air, and in anticipation of great opportunities lying ahead, the navy embarked on several flag-showing cruises, including:

- Europe - *Protea*, April-June 1990; she had been the last navy ship in Europe, in 1972, and was now the first to visit again after so many years[89]

- Taiwan - *Drakensberg* and a strike craft, May-June 1990; this was the first time that South African warships had visited the Far East since 1945[90]

- Zaïre - *Tafelberg* and two minehunters, September 1990[91]

- South America - *Tafelberg*, January-March 1991.[92]

Thus, even before South African political parties had sat down for negotiations, and before the country had been officially welcomed back by the international community, the navy was already restoring military and diplomatic ties and, in some cases, forging new ones. Of course, it must be kept in mind that the navy emerged from the apartheid era with the least tarnished reputation of all the armed forces, and consequently, with the least apartheid baggage.

Visits to Commonwealth countries followed. In March 1991, a strike craft and a minehunter intercepted three Spanish trawlers that were conducting illegal fishing activities off the coast of Namibia, and handed them over to the Namibian authorities. The navy then visited the Namibian port of Lüderitz, the first visit by since Namibian independence in 1990.[93] In June-July 1991, *Drakensberg* visited the British island possession of St Helena, and in July-September 1991, it visited Bangladesh (to offload disaster relief supplies for flood victims), Turkey and Mozambique (with the objective of offloading supplies in both countries).[94] In June 1992 two strike craft visited Kenya, after which *Tafelberg* visited in September 1992, shortly before it was withdrawn from service, and replaced by a former Ukrainian-built Arctic icebreaker supply ship, commissioned as SAS *Outeniqua* (8 June 1993).[95]

Over and above the fact that the navy has assisted African Commonwealth countries in patrolling their coasts (in particular with regard to illegal fishing), the navy has also carried out survey work along the coasts of some of these countries; for example, in March 1993, *Protea* worked along the southern Mozambican coast and visited Maputo.[96] In May 1993, *Drakensberg* visited the United Kingdom for the 50th anniversary of the Battle of the Atlantic.[97] In the meantime, *Outeniqua* visited the Seychelles and other islands in the Indian Ocean (June-July 1993), Europe on a relief operation, sailing right around Africa, and Kenya and Namibia.[98] From 1990 to 1994, a number of warships from Uruguay, France, Taiwan and Portugal visited South Africa. In January 1994, the RN paid its first visit in nearly 20 years, when the frigate HMS *Norfolk* was alongside in Cape Town (27-31 January) and Simon's Town (31 January to 1 February), together with the oiler RFA *Green Rover* (Cape Town, 27 January to 1 February).[99]

Shortly after the watershed elections of April 1994 and the inauguration of Nelson Mandela as South Africa's first democratically elected president, *Drakensberg* departed on a 92-day cruise to show the new South African flag in overseas ports. This included Rosyth in Scotland, in order to participate in the Joint Maritime Course 942 ten-day exercise with other navies; London, to coincide with South Africa's re-admittance to the Commonwealth on 17 July 1994; and Portsmouth.[100] Two small ships then visited islands in the Indian Ocean (September 1994); and *Outeniqua* went to Tanzania to offload some 8000 tons of maize-meal and other food in Dar Es Salaam for Rwandan refugees who had fled their country following the bloodshed caused by the civil war.[101] *Drakensberg* visited the United Arab Emirates, Pakistan, India and Oman (March-April 1995), countries never visited before by the navy.[102] In April 1995, two minehunters conducted a fishery protection patrol off the Namibian coast and visited Lüderitz and Walvis Bay.[103]

In July 1995, *Outeniqua*, a submarine and two strike craft visited Mozambique and Tanzania, also taking on board naval personnel from those countries for sea training.[104] On 7-8 August 1996 the naval chiefs (or their representatives) from 11 countries (including members of the Commonwealth) attended a meeting of the Southern African Inter-state Defence and Security Committee (and the Standing Maritime Committee Southern African States), formed to promote regional cooperation with regard to defence and security matters.[105] In the meantime, *Drakensberg* visited the United States, and stopped over in Senegal and Ghana *en route* back to South Africa (June-September 1996).[106] So, the years following South Africa's re-admittance to the Commonwealth and to the international community at large, were characterised by an enormous increase in the navy's diplomatic and humanitarian opportunities and responsibilities. Given that the navy no longer had any destroyers or frigates, combat support ships and small combatants were deployed as grey diplomats.

Since 1994, a stream of foreign grey diplomats have also visited South African ports, including ships from countries such as Russia, Denmark, India, Poland and Gabon; and visits have also been made by coastguard ships from Japan and Mauritius, countries that had never before sent warships on visits to South Africa. In the course of 1994, 21 warships from 8 countries visited South Africa; 26 such visits were made by warships from 12 countries in 1995; and 27 visits from 10 countries ensued in 1996. Although several of these ships were from the RN, British ships were in the minority, with most of the visitors coming from France. Over and above the RN ships, there were also visits by other Commonwealth countries, namely India (1994), Malaysia (1995), Pakistan (1995) and Mauritius (coastguard, 1996).[107]

In April 1997 the navy celebrated its 75th anniversary in style, with several events in Simon's Town and Cape Town, including South Africa's first international fleet review – attended by 15 South African and 22 other warships (from 13 countries, including 6 that belonged to the Commonwealth: Britain, Kenya, Pakistan, India, Malaysia and Singapore).[108] Over and above flag-showing cruises to other countries, the navy continued to pay visits to African (and sometimes other) Commonwealth

countries to strengthen ties and assist where necessary and possible, for example Namibia (two strike craft, August 1997); Mozambique, Tanzania, Kenya and the Indian Ocean islands (*Drakensberg* and two strike craft, September-October 1997), and Mozambique and Tanzania (*Outeniqua* and two minehunters, August-September 1998).[109] In April 1999, an Indian Navy offshore patrol vessel participated in Operation BLUE CRANE along the east coast of South Africa.[110] In May 1999, personnel from Mauritius and the Seychelles were amongst those who served on board South African or French warships during Exercise TULIPE 99 in Madagascar's territorial waters.[111] In July 2000, *Drakensberg* visited the United States once again as well as Canada, which was a first for a South African warship to visit.[112]

After the navy's 75th anniversary celebrations, foreign grey diplomats continued to stream in South Africa, with a total of 35 warships from 15 countries visiting in 1997, making it the busiest naval-contact year since 1972 (albeit that in that year most of the foreign warship visitors were from Britain). Then, gradually, the number of visitors decreased, with only 17 (from 6 countries) in 1998 and 10 (from 5 countries) in 1999. However, 2000 saw an increase in the flow of incoming foreign sea-traffic once again, with 22 ships from 4 countries visiting, most of them from France. Commonwealth visitors came from Britain (every year) and India (1999), and first-time visitors arrived from Sweden and the People's Republic of China.[113]

At the start of the new millennium, *Drakensberg* visited India (February 2001), and *Outeniqua* and a minehunter visited St Helena (June 2001).[114] The navy received an invitation to send a ship to attend Australia's centennial of federation in October 2001. Under the codename Operation MIGRANT, the combat support ship *Outeniqua* was on her way to Australia, when the fleet review that would have taken place in Sydney was cancelled in the wake of the 11 September terror attacks in the United States. The *Outeniqua* was consequently diverted to La Réunion.[115] From 11-24 February 2002, *Outeniqua* and a strike craft took part in Operation TANZANITE, a peacekeeping exercise conducted along the coast of Tanzania.[116]

From 2001 until the end of 2004, foreign warships continued to visit South African ports, including many from Britain; but there were only four visits from other Commonwealth countries, namely India (2003 and 2004) and Kenya (two ships, end of December 2004 and beginning of January 2005).[117] In June 2002, *Drakensberg* visited St Helena, and in December 2002, *Outeniqua* once again visited the island, as well as Namibia.[118] In December 2003-January 2004, *Drakensberg* visited Haiti.[119]

In the meantime, in April 2001, the South African and Australian navies cooperated for the first time ever, in apprehending a fishing trawler that was fishing illegally in Australia's exclusive economic zone. *South Tommi* (registered in Togo, but with a Spanish captain and crew) was confronted by the Australian fisheries patrol ship *Southern Supporter* and ordered to sail to Fremantle. However, the trawler escaped, sailing towards South Africa, pursued by the Australians, but outrunning the vessel. The SAN was requested to render assistance, and the hydrographic

survey ship *Protea* and the strike craft SAS *Galeshewe* were sent out to intercept the trawler. Australian naval and army personnel (41 in total) flew to South Africa and accompanied the SAN ships, with Commander Daryl Bates, RAN, on board *Protea*. On the evening of 12 April, the SAN ships intercepted the trawler, and found nearly 100 tons of Patagonian toothfish on board. *Southern Supporter* towed the trawler to Cape Town to refuel, and the military personnel then escorted the trawler to Fremantle. Operation LARIAT was a great success, providing ample proof of how well Commonwealth naval personnel can cooperate with one another.[120]

In August 2003, the South African and Australian navies once again cooperated in apprehending a suspect fishing boat, *Viarsa 1*, in what became known as Operation LARIAT II. The Australian fisheries patrol ship *Southern Supporter* chased the Uruguayan trawler, and the South African authorities were asked for assistance. The South African Antarctic supply ship *SA Agulhas*, together with the salvage tug *John Ross*, took part in the chase, and at the beginning of September, *SA Agulhas* intercepted the trawler, and was joined by the *Southern Supporter* and *John Ross*. Illegally fished Patagonian toothfish were found in large quantities on board. *Drakensberg* arrived at the scene on 5 September, with Commander Paul Bartlett, RAN, and 26 other RAN personnel on board. The Australian naval personnel, who were to form the steering party for *Viarsa 1*'s trip back to Australia, were flown to *Viarsa 1* on board a South African Air Force Oryx helicopter.[121]

Soon afterwards, the first of the navy's four new frigates, SAS *Amatola*, arrived in Simon's Town on 4 November 2003, followed by SA Ships *Isandlwana* (25 February 2004*), Spioenkop* (31 May 2004) and *Mendi* (17 September 2004), all built in Germany, but with their weapon suites having been fitted in South Africa. These were followed by three new German-built submarines, which replaced those of the *Daphné* class: SA Submarines *Manthatisi* (date of arrival: 7 April 2006), *Charlotte Maxeke* (26 April 2007) and *Queen Modjadji I* (22 May 2008).[122] These new ships and submarines form part of the arms package that was approved by the South African cabinet and subsequently announced on 18 November 1998, comprising a timely 'emergency buoy' thrown out at the defence force, and the navy in particular. However, the weapons package was subject to controversy from the outset. There were questions about the choice of weapon systems and the high cost involved, as well as the tender process.[123]

Whatever the outcome of the ongoing debate with regard to allegations of irregularities, the fact of the matter is that, for the first time since 1985, the navy now has major surface combatants that can be used for extensive patrol work, but also to take part in exercises with ships from other countries. See in this regard, for example, Exercise GOOD HOPE IV held with units of the German navy (February to March 2010).[124] In addition, these combatants can be deployed as impressive grey diplomats on tailor-made flag-showing cruises. The new frigates have visited Nigeria,

Cameroon, Gabon and São Tomé (May to June 2006); Argentina, Brazil and Chile (October to November 2006); Plymouth (July 2007); Brazil and Ghana (September to October 2007); and the Far East, including Singapore, the People's Republic of China, Malaysia, Vietnam, India and Mauritius (September to December 2008).[125] In the meantime, foreign grey diplomats continue to visit South Africa's shores, in particular ships from France and the United Kingdom; but during the years 2005 to 2010, there have also been visitors from other Commonwealth countries, such as India (June 2005), Pakistan (July 2006) and, once again, India (September 2006).[126] Visits by South African warships (other than those made by the frigates already referred to) to Commonwealth countries during the period 2005 to 2010 included the visit by *Protea* and two strike craft to Mozambique, Tanzania and Kenya (October 2006).[127]

There was a possibility that the Australian frigate HMAS *Canberra* (II) might visit South Africa in approximately April 2001, but this did not materialise.[128] The first peacetime Australian naval visit to South Africa in 37 years took place in July 2005, when the frigate HMAS *Anzac*, *en route* back from Europe after taking part in the Fleet Review in the Solent to commemorate the 200th anniversary of the Battle of Trafalgar (and participating in the Festival of the Sea in Portsmouth; events also attended by South Africa's combat support ship *Drakensberg*), visited Simon's Town (23-26 July) and Cape Town (26-28 July 2005).[129] When a NATO task force visited South Africa for the first time in August 2007, the Canadian frigate HMCS *Toronto* was one of the six visiting warships that exercised with SAN units.[130] In May 2008, the first Exercise IBSAMAR was held, off the South African coast, involving warships from South Africa, Brazil and India, and with an observer from Tanzania on board one of the South African frigates.[131] With the exception of New Zealand, Nigeria and Ghana, in the course of the past century, South Africa has hosted warships from most of the major Commonwealth countries in peacetime, while its warships have visited all major Commonwealth countries except New Zealand.

Finally, as far as contact between the South African and other Commonwealth navies, and cooperation with them, are concerned, mention should be made of the fact that South Africa has donated a total of six small *Namacurra* class harbour patrol boats to three Commonwealth countries in Africa: two to Malawi (in 1988 and 2008), two to Namibia (2002) and two to Mozambique (2004). In Mozambique's case, these boats today (2010) constitute the only worthwhile assets of that country's navy.[132]

Concluding Perspectives

The Commonwealth was and is an important organisation that through the years has played a significant role on the international stage. Close ties have also been forged between many of the Commonwealth member states, including with regard to naval cooperation. After the US Navy, and the 'NATO Navy', the 'Commonwealth Navy' was, and still is, the world's most powerful naval force. For several decades, the latter navy

has played a major role in sealane security and the protection of trade routes. In this regard, South Africa's naval forces have also played a significant role, both in times of war and relative peace.

In this study, the history of the SAN and its predecessors has been reviewed, and the extent to which interaction with other Commonwealth navies occurred during the years 1910 to 2010 has been indicated. It has been pointed out that although the Union of South Africa was established in 1910, and the Union Defence Forces in 1912, the Union only acquired its first naval force in 1922, when the South African Naval Service was formed. In the meantime, the country's naval defence was conducted by the RN, albeit that the local South African Division of the Royal Naval Volunteer Reserve was also in place. During WWI, 164 members of the South African Division Naval Reserve served in the RN. The South African Naval Service's three small ships were withdrawn from service in 1933-34 because of the Great Depression, and it was only during WWII that South Africa built up its first relatively substantial naval force. The country entered the war against Germany on 6 September 1939, and in light of the threat posed by submarines and mines, several trawlers and whalers were converted into minesweepers and/or anti-submarine patrol vessels. By the end of hostilities in September 1945, South Africa's naval forces had not only operated in local waters, but had also seen action in the Mediterranean against German and Italian forces, and had sent ships to serve in the Far East against Japan, thus cooperating with other Commonwealth (and other) navies in all the war zones. Nearly 3000 South Africans also served in the RN.

It has also been pointed out that in the wake of WWII, South Africa's naval forces were rationalised. However, in the context of the Cold War and the Soviet threat to the strategically important Cape sea route, the navy then gradually grew in size and importance, albeit that it was (and today still is) small in comparison to other Commonwealth navies such as the RN and the Indian, Canadian and Australian navies. It has been noted that, in accordance with the Simonstown Agreement, the RN handed over its Simon's Town Naval Base to the South African Navy in 1957, and that they acquired several new warships from the United Kingdom. In the meantime, South Africa gradually became more isolated internationally because of the National Party government's racially based policy of apartheid. As has been indicated, this in due course also negatively affected the navy and its interaction with other Commonwealth navies. For many decades, the RN was the SAN's main naval partner. Many RN ships visited South African ports, and regular exercises took place between South African, British and sometimes other warships; but in the course of the 1970s this came to an end. In 1975, the Simonstown Agreement was abrogated, and in 1977, the UN imposed a mandatory arms embargo against South Africa. The country had to seek new allies, and it established close relations with Israel, the Republic of China (Taiwan) and Chile.

In the meantime, South Africa became embroiled in the Namibian War of Independence (1966-89); a war that spilled over into Angola. This study indicates the limited, albeit important, role the navy played in this conflict, as well as the serious negative implications that the conflict had. Throughout the study, the strong ties that the SAN enjoyed with

the RN, in contrast to South Africa's limited contact with the navies of, for example, Australia, New Zealand, Canada, India, Pakistan, and other Commonwealth navies, were considered, and where possible, parallels were drawn between the development of the SAN and that of other Commonwealth navies. In the course of the 20th century and beyond, to a large extent, contact with Commonwealth navies has, indeed, been limited to contact with the RN. This was initially because of its physical presence in South Africa, owing to the fact that it controlled the Simon's Town Naval Base until 1957, but also because of political considerations (with many countries boycotting South Africa because of the racial policy that was followed until 1990, with even Britain eventually severing military ties). Other contributing factors in this regard included the distance of South Africa from far-flung countries such as, for example, Canada, Australia and New Zealand (with other countries also having other commitments and spheres of influence), as well as the relatively small size of the SAN. Since 1994, most of the naval ties between South Africa and other Commonwealth countries have chiefly entailed contact with African member states, taking the form of humanitarian aid, assistance in patrolling the coastal waters of these countries, and supplying sea-training for their sailors (with most of these African navies having very few, if any, ocean-worthy warships).

The advent of the truly democratic South Africa in 1994 opened new ports for South African warships, and many flag-showing visits have since taken place, while many foreign warships (grey diplomats) have also visited South Africa, sometimes participating in exercises with the navy. Whereas in the years up to the mid-1970s, most foreign grey diplomats were British ships, there have been many more visits by ships from other countries since 1994. This should not be seen as a deliberate moving away from the RN and other predominantly white Commonwealth navies by South Africa, but rather as an indication of how the country's interests have diversified. There is now a larger emphasis being placed on contact with developing countries (including Commonwealth countries that previously shunned South Africa) and powerful non-European countries such as Brazil, India and the People's Republic of China. The changing nature of global connections obviously also needs to be taken into account in this regard. Since 1994, the RN has still been a frequent visitor to South African ports, with more visits by its warships than by the warships of any other country occurring in 2001; but relatively large formal exercises now take place on a regular basis with ships from Brazil, Argentina and Uruguay (Exercise ATLASUR), as well as Brazil and India (IBSAMAR). Hopefully, closer ties with Australia will also become a reality in the future.

Another factor that has to be taken into account in evaluating the navy's history and its cooperation with Commonwealth (and other) navies in the course of the 20th century and beyond, is the shifting demands confronting navies. The navy developed from a small coastal force (1922-33) to a navy participating on a limited scale in WWII (1939-45), a small blue-water navy (1945-85), a navy that placed the emphasis on defending its littoral waters (1985-2006), and finally, to a navy that is once again a small-scale but modern blue-water force. As of 2010, the navy has approximately:

- 7000 personnel (including more than 2000 civilians)

- 3 German-built 209 class submarines (2001-08)

- 3 German-built Valour class Meko frigates (2001-07)

- 3 locally-built (Israeli-designed) Warrior class gun-boats (1978-86)

- 3 German and South African-built River class minehunters (1979-81)

- 3 small South African-built T-Craft inshore patrol boats (1991-96)

- 21 small South African-built *Namacurra* class harbour patrol vessels (1980-81)

- 1 South African-built combat support ship (1984-87)

- 1 British-built Hecla class hydrographic survey ship (1970-72)

- 3 tugs and 2 multi-role tenders.[133]

Whereas until 1967 all the major ships were designed and built in Britain (thus endowing the navy with the character of a 'mini-RN'), most of today's major units are of German origin.

In comparison with other Commonwealth navies, it is clear that today (2010) South Africa, with its three submarines and four frigates, is much stronger than the navies of, for example, Ghana, Nigeria, Tanzania, Kenya and the many small island countries; stronger than the New Zealand navy (two frigates); comparable to the navies of Malaysia (two submarines and four frigates) and Singapore (four submarines plus two more in the pipeline, and six frigates).[134] However, it is weaker than the navies of Canada (4 submarines, 3 destroyers and 12 frigates), Australia (6 submarines and 12 frigates), Pakistan (5 submarines and 7 frigates, plus 3 building), and India (17 submarines, 1 aircraft carrier (plus 1 fitting out), 8 destroyers and 14 frigates, with 1 submarine, 3 destroyers and 5 frigates building). Of all the Commonwealth navies, the RN is still the strongest (13 submarines and 4 building, 3 aircraft carriers, 7 destroyers and 5 building, and 17 frigates), albeit that it has been considerably scaled down ever since the end of the Cold War.[135]

Currently, ever-increasing demands are being made on the South African National Defence Force to participate in UN or African Union peacekeeping operations. For this reason, it is also probable that the navy will be more geared towards humanitarian and peace-support operations in future. Consequently, the need for at least one amphibious ship (or, preferably, two) has been identified, while the remaining gunboats and minehunters will probably be replaced in due course by six multi-mission offshore patrol vessels. Comparable developments in other countries include Australia's decision to acquire two large amphibious ships, as well as three destroyers; Canada's intention to acquire three multi-role joint support ships; and New Zealand's acquisition of a large multi-role ship, two offshore patrol vessels and four inshore patrol vessels.

The modern 'new-look' navy of the future will undoubtedly be able to play a meaningful role with regard to humanitarian and peacekeeping operations, and contribute towards combating piracy (as it is currently already able to do, albeit on a more limited scale). It will also be able to contribute towards the envisaged African rapid-reaction force.[136]

Currently, financial constraints and the lack of a maritime culture amongst the largest portion of the population comprise challenges that are being faced by the navy, both in terms of the present and the near future. One can only hope that the political context will be conducive to the development and maintenance of a small but modern and well-trained naval force, and that within this context, the navy will be utilised in a professional and circumspect manner. After all, the navy is a very important instrument in foreign affairs, especially on a diplomatic level. South Africa cannot afford to be isolated, as was the case from the early 1960s until the late 1980s. Hopefully, in the course of the next decades of the 21st century, the navy will build on the naval ties that it has established since 1994, without neglecting its very important cooperation with Commonwealth navies, cooperation that dates back for more than a century.

Notes

1. An adapted shorter version of this paper was published in *Scientia Militaria: South African Journal of Military Studies*, vol. 38, no. 2, 2010, pp. 109-130. The permission granted by the editors of *Scientia Militaria* to publish portions of the original article in a new format, is gratefully acknowledged.

2. For a review of the history of the region now known as South Africa, from the earliest times to 1910, see for example TRA Davenport & C Saunders, *South Africa: a Modern History*, 5th edn, London, 2000, pp. 3-264; EA Walker (ed), *The Cambridge History of the British Empire 8: South Africa, Rhodesia and the High Commission Territories*, Cambridge, 1963, pp. 1-660; H Giliomee & B Mbenga (eds), *New History of South Africa*, Cape Town, 2007, pp. 3-232; and FA van Jaarsveld, *From Van Riebeeck to Vorster 1652-1974: an Introduction to the History of the Republic of South Africa*, Johannesburg, 1975, pp. 1-231.

3. To clarify, when the term 'Simon's Town' is used it is in reference the to the naval base, whereas the term 'Simonstown' refers specifically to the agreement.

4. A du Toit, *South Africa's Fighting Ships Past and Present*, Rivonia, 1992, pp. xviii, xx.

5. *Statutes of the Union of South Africa 1912*, Cape Town, 1912, pp. 190-290.

6. B Rice, *The Royal Navy in South Africa 1900-2000*, Liskeard, 2001, pp. 3, 29; *The Natal Advertiser*, 1 September 1913, p. 3; and *The Natal Advertiser*, 6 September 1913, p. 3. The Royal Navy's battle-cruiser HMS *New Zealand* (II) visited Simon's Town (March) and Durban in 1913. Rice, *The Royal Navy in South Africa 1900-2000*, p. 30; and T Pearson, *'African Keyport': Story of the Port of Durban*, Rossburgh, 1995, p. 187.

7. du Toit, *South Africa's Fighting Ships Past and Present*, pp. xxii-xxvii; JJ Colledge, *Ships of the Royal Navy*, London, 1987, pp. 59, 72, 116, 326; S Hay, *History of the RNVR South African Division*, Cape Town, 1920, p. 193; information supplied by Commander WM Bisset, 23 February 2009.

8. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 3-16.

9. D Stevens (ed), *The Royal Australian Navy: The Australian Centenary of Defence Volume III*, The Oxford University Press, Melbourne, 2001, pp. 11-22, 300-301.

10. C Howard, *The Navy in New Zealand: an Illustrated History*, London, 1982, p. 35; and FJ McDougall, *New Zealand Naval Vessels*, 1989, pp. 2, 11, 16.

11. JC Goosen (compiler), *South Africa's Navy: the First Fifty Years*, Cape Town, 1973, p. 37; CH Bennett & AG Söderlund, *South Africa's Navy: a Navy of the People and for the People*, Simon's Town, 2008, p. 19; and *A Navy for Three Oceans: Celebrating 75 Years of the South African Navy*, Simon's Town, 1997, p. 2. The RN retained 5 officers, 12 ratings and 10 civilians to train the South African Division Naval Reserve.

12. Stevens (ed), *The Royal Australian Navy*, pp. 302-303; information supplied by Dr David Stevens, 23 February 2009; and McDougall, *New Zealand Naval Vessels*, pp. 5, 25-26, 62-63.

13. *Union of South Africa, Debates of the House of Assembly. Third Session – Eighth Parliament, 2nd September - 5th September, 1939* 36, Cape Town, columns 17-100. See also LJ van der Westhuizen, *Die Neutraliteitsvraagstuk as Verdelingsfaktor in die Suid-Afrikaanse Politiek (1933-1940), met Besondere Verwysing na die Rol van Genl JBM. Hertzog*, MA, University of the Free State, 1984, passim.

14. For a review of the naval activities off the South African coast, see LCF Turner, HR Gordon-Gumming & JE Betzzler, *War in the Southern Oceans*, Cape Town, 1961.

15. A Wessels, 'Die Opbou van die Unie-Verdedigingsmagte in die Tydperk September 1939 tot September 1941' [The Building of the Union Defence Forces in the Period September 1939 to September 1941], *Journal for Contemporary History*, vol. 19, no. 3, December 1994, pp. 1-22; A Wessels, 'Die Aanwending van die Unie-Verdedigingsmagte in die Tydperk September 1939 tot September 1941' [The Application of the Union Defence Forces in the Period September 1939 to September 1941], *Journal for Contemporary History*, vol. 20, no. 1, June 1995, pp. 1-23; A Wessels, 'The First Two Years of War: the Development of the Union Defence Forces (UDF), September 1939 to September 1941', *Military History Journal*, vol. 11, no. 5, June 2000, pp. 165-172, 185; and du Toit, *South Africa's Fighting Ships Past and Present*, pp. 27-31.

16. See MPH Laver and others, *Sailor-Women, Sea-Women, SWANS: A History of the South African Women's Auxiliary Naval Service 1943-1949*, Simon's Town, 1986.

17. CJ Nöthling, *Geskiedenis van die Suid-Afrikaanse Weermag 1* [History of the South African Defence Force vol. 1], Silverton, 1995, p. 58.

18. For a review of South Africa's role in the war against Japan, see A Wessels, 'Die Stryd Teen Nippon: Suid-Afrika en Japan, 1941-1945' [The War Between Japan and South Africa, 1941-1945], *Journal for Contemporary History*, vol. 30, no. 3, December 2005, pp. 222-241; A Wessels, 'South Africa and the war against Japan 1941-1945', *Military History Journal*, vol. 10, no. 3, June 1996, pp. 81-90, 120.

19. WM Bisset, 'SA Naval Personnel Seconded to the Royal Navy During the Second World War 1939-1945', *Simon's Town Historical Society Bulletin*, vol. 12, no. 2, July 1982, pp. 55, 59; *The South African Naval Forces 1939-1945*, brochure, 1990; R Williams, 'South Africans in the Royal Navy', *Naval Digest: Journal of the Naval Heritage Society of South Africa* 5, Simon's Town, 2001, pp. 1-27; and André Wessels Private Document Collection (Bloemfontein), SA Vloot (file): WM Bisset – A Wessels, 6 May 1992 (letter). For a review of the role of South Africans in all naval sectors, see CJ Harris, *War at Sea: South African Maritime Operations During World War II*, Rivonia, 1991; and HR Gordon-Cumming, *Official History of the South African Naval Forces During the Second World War (1939-45)*, Simon's Town, 2008.

20. du Toit, *South Africa's Fighting Ships Past and Present*, p. 32.

21. Turner et al, *War in the Southern Oceans*, p. 259.

22. HJ Martin & ND Orpen, *South Africa at War: Military and Industrial Organization and Operations in Connection with the Conduct of War, 1939-1945*, Cape Town, 1979, p. 352; and *Standard Encyclopaedia of Southern Africa*, vol. 9, Cape Town, 1973, p. 236.

23. Information supplied by Captain Bill Rice, 24. February 2009.

24. du Toit, *South Africa's Fighting Ships Past and Present*, p. 171.

25. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 171, 182-192.

26. PW Coetzer (ed), *Die Nasionale Party 5*: *Van Oorlog tot Oorwinning* [The National Party 5: From War to Winning], Bloemfontein, 1994, pp. 596-709; AJ Posthuma, *Generaal J.C. Smuts en Afrikaner-oppositie 1939-1948* [General JC Smuts and South African Opposition 1939-1948], D Litt et Phil, University of South Africa, 1990, pp. 176-277.

27. For more information on the role of South Africa's grey diplomats, see A Wessels, 'South Africa's Grey Diplomats: Visits by South African Warships to Foreign Countries 1946-1996', *Scientiae Militaria*, vol. 27, 1997, pp. 67-105; and A Wessels, 'Onwaarskynlike Ambassadeurs: Vlagvertoon Vaarte deur Suid-Afrikaanse Oorlogskepe, 1922-2002' [Unlikely Ambassadors: Flag Displays by South African Battleships, 1922-2002], *Journal for Contemporary History*, vol. 27, no. 3, December 2002, pp. 54-81.

28. *Commando*, vol. 2, no. 12, May 1951, pp. 4-7, 39; *Commando*, vol. 2, no. 15, August 1951, pp. 4-7; *Navy News*, vol. 11, April 1992, p. 25; du Toit, *South Africa's Fighting Ships Past and Present*, p. 161.

29. du Toit, *South Africa's Fighting Ships Past and Present*, p. 172.

30. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 193-200. For a review of the role played by the two destroyers SA Ships *Jan van Riebeeck* and *Simon van der Stel* in the South African Navy see also A Wessels, 'The South African Navy's Destroyers, 1950-1975', *Naval Digest: Journal of the Naval Heritage Society of South Africa*, vol. 11, Simon's Town, 2005, pp. 37-57.

31. SAS *Gelderland* (ex-HMS *Brayford*). See du Toit, *South Africa's Fighting Ships Past and Present*, pp. 206-207, 210.

32. Goosen (ed), pp. 133-146; P.J. Henshaw, 'The Transfer of Simonstown: Afrikaner Nationalism, South African Strategic Dependence, and British Global Power', *The Journal of Imperial and Commonwealth History*, vol. 20, no. 3, September 1992, pp. 420-444; A Wessels, 'Die Simonstadse Ooreenkoms' [The Simonstown Agreement], *Yesterday and Today*, 14 September 1987, pp. 18-21; *Die Burger*, 2 February 1957, pp. 1,8,9; *The Cape Argus*, 3 April 1957, p. 11; and *Navy News*, 13, March 1994, p. 12.

33. Bennett et al, *South Africa's Navy*, pp. 43, 45.

34. See, for example, *Commando*, vol. 8, no. 7, July 1957, p. 4; *Commando*, vol. 8, no. 12, December 1957, p. 37; *Commando*, vol. 10, no. 11, November 1959, pp. 6-7; *The Admiralty News Summary*, vol. 105, May 1955, p. 15; *The Cape Argus*, 20 June 1959, p. 3; *The Cape Argus*, 24 September 1959, p.1; information supplied by Rear-Admiral Chris Bennett, 23 February 2009; and C Bennett, *Three Frigates*, Just Done Publications, Durban, 2006, pp. 106-115.

35. For a review of visits by warships to South African ports until 1961, see A Wessels, 'Buitelandse Vlagvertoonbesoeke aan Suid-Afrikaanse Hawens (1): Vanaf die VOC-Tydperk tot 1961' [Nomination visits to South African Ports Vol 1: From the VOC Period to 1961], *Journal for Contemporary History*, vol. 31, no. 1, June 2006, pp. 81-98.

36. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 206-219; *History of the Mine Countermeasures Flotilla 1922-1988*, unpublished manuscript, SA Naval Museum, Simon's Town pp. 23, 25-26; SANDF Documentation Service, Pretoria: Log-books of SAS *Johannesburg*, SAS *Kimberley* and SAS *Walvisbaai*; *Commando*, vol. 9, no. 8, August 1958, pp. 22-23; A Wessels, 'Vrystaat ... Fregat van die Suid-Afrikaanse Vloot' [Free ... Frigate of the South African Navy],

Seeredding, June 1985, pp. 9-11, 21; du Toit, *South Africa's Fighting Ships Past and Present*, pp. 201-205; and SANDF Documentation Service, Log-book of SAS *Vrystaat*.

37. See, for example, SANDF Documentation Centre, Log-books of SAS *Vrystaat* and SAS *Pretoria*; du Toit, *South Africa's Fighting Ships Past and Present*, pp. 163, 202, 213; *Commando*, vol. 8 no. 7, July 1957, p. 4; and *Commando* , vol. 8, no. 9, September 1957, p. 31.

38. Stevens (ed), *The Royal Australian Navy*, pp. 155-190; J Goldrick, *No Easy Answers: the Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka, 1945-1996*, Lancer Publishers, New Delhi, 1997, pp. 1-32, 45-56; and RVB Blackman (ed), *Jane's Fighting Ships 1960-61*, London, 1960, pp. 59-90.

39. Giliomee, *New History of South Africa*, pp. 333-335; W Beinart, *Twentieth-Century South Africa*, Oxford, 1994, pp. 156-162.

40. O Geyser, *Watershed for South Africa: London 1961*, Durban, 1983, pp. 76-100; and GD Scholtz, *Dr Hendrik Frensch Verwoerd*, vol. 2, Johannesburg, 1974, pp. 91-119.

41. For a review of visits made by warships to South African ports, 1961-66, see A Wessels, 'Buitelandse vlagvertoonbesoeke aan Suid-Afrikaanse hawens (2): die periode van fluktuerende internasionale betrekkinge, 1961-94' [Nomination visits to South African Ports Vol 2, the Period of Fluctuating International Relations], *Journal for Contemporary History*, vol. 31, no. 2, September 2006, pp. 78-82.

42. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 220-239. For the role played by these and the older frigates in the SAN, see A Wessels, 'The South African Navy's frigates, 1944-1985', *Naval Digest*, vol. 11, November 2005, pp. 1-36. For more on the Type 12s in SAN service, see also Bennett, *Three Frigates*.

43. JP Williams, 'The Arms Embargo Against South Africa: success or Futility?', *Journal for Contemporary History*, vol. 13, no. 1, June 1988, p. 1; and Bennett, *Three Frigates*, pp. 37-38, 114-115.

44. For the purpose of this study, the finer details of the Namibian War of Independence are not important. For more on the conflict see, for example, PJ Els, *Ongulumbashe: Where the Bushwar Began*, Wandsbeck, 2007; and W Steenkamp, *South Africa's Border War 1966-1989*, Gibraltar, 1989, as well as the special editions of the *Journal for Contemporary History*, for example vol. 31, no. 3, which deal with the war.

45. For more details with regard to the SAN's role in the war see, for example, A Wessels, 'The South African Navy During the Years of Conflict in Southern Africa, 1966-1989' *Journal for Contemporary History*, vol. 31, no. 3, December 2006, pp. 283-303; and A Wessels, 'Skout-admiraal (J.G.) André Burgers se Vlootherinneringe aan die Jare van die "Grensoorlog", 1966 tot 1989' [Rear Admiral (J.G.) Andre Burgers Naval Memories of the Years of the 'Border War', 1966 to 1989], *Journal for Contemporary History*, *Journal for Contemporary History*, vol. 31, no. 3, December 2006, vol. 31, no. 3, December 2006, pp. 283-303 and pp. 310-323; Bennett, *Three Frigates*, pp. 155-166.

46. André Wessels Private Document Collection (Bloemfontein), Grey Diplomats (file): WD Jones, List of Ships Visiting Simon's Town 1965-1978 (copy supplied by A Söderlund), pp. 2-8.

47. *Die Burger* (The Citizen), 10 November 1994, p. 15. The next American warships to visit were the US Ships *Gettysburg* (II) and *Halyburton*, in 1994. See *Salut*, vol. 1, no. 8, December 1994, pp. 28-29. Since 1967, no other American aircraft carrier has docked in any South African port, albeit the USS *Theodore Roosevelt* anchored in Table Bay during October 2008. See several SABC TV news broadcasts, 4-9 October 2008.

48. For more on the role played by *Tafelberg* in the SAN, see A Wessels, 'Veertig jaar se ondersteuning ter see. Gevegsteunskepe in die Suid-Afrikaanse Vloot, 1967-2007 (1): SAS *Tafelberg* en SAS *Drakensberg*', *Journal for Contemporary History*, vol. 32, no. 2, December 2007, pp. 164-182.

49. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 187, 226; SANDF Documentation Service: Log-books of SAS *President Kruger* and *Tafelberg*; and information supplied by Commodore DK Kinkead-Weekes.

50. SA Naval Museum: Newspaper cuttings (file); *History of the Mine Countermeasures Flotilla 1922-1988*, unpublished manuscript, pp. 41-42, 46; du Toit, *South Africa's Fighting Ships Past and Present*, pp. 197, 213, 226; SANDF Documentation Service: Log-book of SAS *Mosselbaai*; and information supplied by Captain RC Cousens.

51. *SA Navy News*, vol. 2, no. 11, 1968, p. 17; *Navy News* 11, June 1992, p. 6; and Simon's Town Museum press clipping book. *Ghazi* was Pakistan's first submarine. During the Indo-Pakistani War of 1971, she sank with all on board. RVB Blackman (ed), *Jane's Fighting Ships 1966-1967*, London, 1966, p. 202; and RVB Blackman (ed), *Jane's Fighting Ships 1972-1973*, London, 1972, p. 247.

52. Information supplied by Rear Admiral Arné Söderlund, 7 March 2005, Mr Vic Jeffery, 12 April 2005, and Mr Peter Reid, 27 April 2005. For more on Australia's *Oberon* class submarines, see R Sharpe (ed), *Jane's Fighting Ships 1990-91*, Coulsdon, 1990, p. 29.

53. SA Naval Museum: Report of proceedings – visit to Australia – period 7th October to 3rd December, 1968; *Commando*, vol. 20, no. 4, April 1969, pp. 13, 15; *Commando*, vol. 20, no. 5, May 1969, pp. 13, 15, 25; du Toit, *South Africa's Fighting Ships Past and Present*, p. 226; and *Navy News*, Vol. 8, December 1986, p. 9.

54. Bennett, *Three Frigates*, pp. 83-89; and du Toit, *South Africa's Fighting Ships Past and Present*, pp. 249, 252, 260.

55. Blackman (ed), *Jane's Fighting Ships 1966-67*, pp. 12, 35, 202; RVB Blackman (ed), *Jane's Fighting Ships 1968-69*, London, 1968, p. 130; Blackman, *Jane's Fighting Ships 1972-73*, p. 154; Sharpe (ed), *Jane's Fighting Ships 1990-91*, p. 23; Stevens, *The Royal Australian Navy*, pp. 298-309.

56. SANDF Documentation Service, Log-books of SAS *Johanna van der Merwe*, SAS *President Kruger*, SAS *President Steyn* and SAS *Simon van der Stel*; and du Toit, *South Africa's Fighting Ships Past and Present*, pp. 226, 228, 242, 271. For more on the history of the *Daphné* class submarines in navy service, see SA Naval Museum, *History of the South African Navy Submarine Service* (typed manuscript), and *Abbreviated History of SAN Submarine Branch* (typed manuscript); *Through the Periscope: South African Submarines: the First Thirty Years. Reflections Past and Present*, Simon's Town, 1999; A Wessels, 'Duikbote in die Suid-Afrikaanse Vloot: die Eerste Fase, 1970-2003' (Submarines in the South African Fleet: the First Phase) (published in two parts), *Journal for Contemporary History*, vol. 30, no. 2, September 2005, pp. 180-194.

57. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 263-266.

58. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 253-254.

59. H Potgieter and W Steenkamp, *Aircraft of the South African Air Force*, Cape Town, 1980, p. 113.

60. Grey Diplomats (file): WD Jones, List of Ships Visiting Simon's Town 1965-1978, p. 10; du Toit, *South Africa's Fighting Ships Past and Present*, pp. 229-230; Simon's Town Museum, newspaper clipping book.

61. du Toit, *South Africa's Fighting Ships Past and Present*, p. 176.

62. Grey Diplomats (file): WD Jones, List of Ships Visiting Simon's Town 1965-1978, pp. 10-11. See also Wessels, 'Buitelandse Vlagvertoonbesoeke …' (International flag Display Visits), vol. 2, pp. 82-93.

63. FJ du Toit Spies, *Operasie Savannah: Angola 1975-1976*, Pretoria, 1989; SL Barnard, 'n Historiese oorsig van die gewapende konflik aan die noordgrens van SWA/Namibië 1966-1989' [A Brief History of Armed Conflict on the Northern Border of South West Africa/Namibia, 1966-1989], *Acta Academica*, vol. 23, no. 1, March 1991, pp. 112-114; and CJ Nöthling, *Geskiedenis van die Suid-Afrikaanse Weermag* [History of the South African Defence Force], vol. 2, Silverton, 1996, pp. 18-19, 24.

64. Bennett, *Three Frigates*, pp. 155-166; Spies, *Operasie Savannah: Angola 1975-1976*, pp. 141-142, 147, 168, 174-176; du Toit, *South Africa's Fighting Ships Past and Present*, pp. 231-232; and Steenkamp, *South Africa's Border War 1966-1989*, pp. 51-52.

65. Information supplied by Rear-Admiral PA Wijnberg; *Navy News* 11, April 1992, p. 27; and du Toit, *South Africa's Fighting Ships Past and Present*, p. 232.

66. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 281-289; and TD Potgieter, 'Another Apartheid Dilemma: Corvettes for the South African Navy', *New Contree*, vol. 47, September 2000, pp. 94-95. For the run-up to and consequences of the United Nations embargo, see A Wessels, 'The United Nations Arms Embargo Against South Africa, 1977-1994', *War & Society*, vol. 29, no. 2, October 2010, pp. 137-153.

67. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 303, 309.

68. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 213-216, 242, 291-293.

69. For more on this submarine, see R Sharpe (ed), *Jane's Fighting Ships 1990-91*, Coulsdon, 1994, p. 475.

70. Steenkamp, *South Africa's Border War 1966-1989*, pp. 61-87; Barnard, 'n Historiese oorsig van die gewapende konflik aan die noordgrens van SWA/Namibië 1966-1989', pp. 116-119; Nöthling, *Geskiedenis van die Suid-Afrikaanse Weermag 1*, pp. 25-26; L Barnard, 'The Battle of Cassinga, 4 May 1978: a Historical Assessment. Part 1: The Course of the Battle and Ensuing Controversy' and 'Part 2: Interviews of Two SADF Soldiers', *Journal for Contemporary History*, vol. 31, no. 3, December 2006, pp. 131-146; 147-160.

71. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 232-234; *The Cape Times*, 18 August 1980, p. 8; and Bennett et al, *South Africa's Navy*, p. 35.

72. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 294-296.

73. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 310-315.

74. TRH Davenport, *South Africa: a Modern History*, 4th edn, Basinstoke, 1991, pp. 397-437; and Beinart, *Twentieth-Century South Africa*, p. 229.

75. Steenkamp, *South Africa's Border War 1966-1989*, pp. 89-117; Barnard, 'n Historiese oorsig van die gewapende konflik aan die noordgrens van SWA/Namibië 1966-1989', p. 119; and Nöthling, *Geskiedenis van die Suid-Afrikaanse Weermag 1*, pp. 37-40.

76. See, for example, P Stiff, *The Silent War: South African Recce Operations*, Alberton, 1999, pp. 48-52, 260, 272-273, 347-350, 357-358, 372-373, 392, 458-469; and G Mills and D Williams, *Seven Battles that Shaped South Africa*, Cape Town, 2006, pp. 173-175.

77. D Walsh, 'Why Do We Need Submarines?', *African Armed Forces Journal*, February 2005, p. 22.

78. Bennett, *Three Frigates*, pp. 187-201; du Toit, and *South Africa's Fighting Ships Past and Present*, pp. 234-236.

79. For more on the HMAS *Voyager* and USS *Frank E Adams* disasters see Stevens, *The Royal Australian Navy*, pp. 201-203.

80. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 142-144, 176, 178, 207-210, 218-219, 255, 278-279.

81. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 316-322; A Wessels, 'Veertig Jaar se Ondersteuning ter See' [Forty Years of Support at Sea], vol. 1, pp. 174-182.

82. Steenkamp, *South Africa's Border War 1966-1989*, pp. 117-184; Barnard, 'n Historiese oorsig van die gewapende konflik aan die noordgrens van SWA/Namibië 1966-1989', pp. 119-125; Nöthling, *Geskiedenis van die Suid-Afrikaanse Weermag 1*, pp. 40-42; and P Stiff, *Nine Days of War*, 2nd edn, Alberton, 1991.

83. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 243, 320; *Navy News* 7, June 1988, pp. 2, 7-10; and Nöthling, *Geskiedenis van die Suid-Afrikaanse Weermag 1*, 2, p. 35.

84. *Navy News*, vol. 4, no. 3, 1985, pp. 3-7, 11-14; *Paratus*, vol. 29, no. 1, January 1978, p. 2; *Paratus*, vol. 32, no. 6, June 1981, p. 16; SA Naval Museum, Chilean ship Esmeralda (file): various documents; and *Navy News*, vol. 3, no. 10, 1984, p. 3.

85. Blackman (ed), *Jane's Fighting Ships 1966-67*, pp. 11-17, 34-39, 125-129, 193-194, 202-204, 272-298; and Sharpe (ed), *Jane's Fighting Ships 1990-91*, pp. 23-26, 77-82, 262-268, 407-409, 430-433, 675-690.

86. Compare the force strength and inventory of the defence force in 1989 with those of 1994, as supplied by International Institute for Strategic Studies, *The Military Balance 1989-90*, London, 1989, pp. 139-140; and *The Military Balance 1993-94*, London, 1993, pp. 217-219.

87. For the transformation of the South African Defence Force (1989) into the South African National Defence Force (1994), and in particular the development of the latter in the years 1994-2009, see, for example, A Wessels, 'The South African National Defence Force, 1994-2009: a Historical Perspective', *Journal for Contemporary History*, vol. 35, no. 2, September 2010, pp. 131-152; *The Cape Times*, 20 July 1994, p. 6; *The Star*, 19 July 1994, p. 9; and *The Citizen*, 21 July 1994, p. 1.

88. Sharpe (ed), *Jane's Fighting Ships 1990-91*, pp. 675-690; R Sharpe (ed), *Jane's Fighting Ships 1994-95*, Coulsdon, pp. 23-36, 84-102, 279-295, 411-419, 450-453, 474-482, 619-623, 730-742.

89. Line-book: SAS *Protea* (consulted on board the ship, July 1997); *Navy News* vol. 9, July 1990, pp. 12, 15, 17; and *The Natal Mercury*, 5 June 1990, p. 6.

90. *Navy News* vol. 9, August 1990, pp. 2, 10, 11, 15-16, 20; du Toit, *South Africa's Fighting Ships Past and Present*, pp. 307, 320; and *The Natal Mercury*, 12 May 1990, p. 4 and 26.6.1990, p. 2.

91. *Navy News* vol. 9, January-February 1991, pp. 12-13; *Paratus*, vol. 41, no. 10, October 1991, pp. 8-9.

92. *Navy News* vol. 10, April-May 1991, pp. 12-16; G Wardley, 'Operation Gypsy – SAS *Tafelberg*'s South American Adventure', *Unisa Latin American Report*, vol. 7, no. 2, 1991, p. 89.

93. Line-book: SAS *Oswald Pirow/René Sethsen* (consulted on board the ship, July 1997).

94. *Navy News* vol. 10, August-September 1991, p. 9; du Toit, *South Africa's Fighting Ships Past and Present*, p. 321; *Navy News*, vol. 10, November-December 1991, pp. 8-11; *Navy News*, vol. 11, June 1992, pp. 8-9, 14; *Sunday Tribune*, 25 August 1991, p. 19; *Sunday Tribune*, 8 September 1991, p. 17; *The Natal Mercury*, 7 August 1991, p. 6; and *Sunday Tribune*, 7 September 1991, p. 1.

95. *The Natal Mercury*, 19 June 1992, *The Natal Mercury*; 25 June 1992, p. 12; *Navy News*, vol. 11, November-December 1992, pp. 2; *Navy News*, *vol.* 12, January-February 1992, pp. 10-11; *Paratus*, vol. 43, no. 11, November 1992, pp. 18-19; *Sunday Tribune*, 11 October 1992, pp. 8-9. For the role of *Outeniqua* in the navy, see Wessels, 'Veertig jaar se ondersteuning ter see. Gevegsteunskepe in die Suid-Afrikaanse Vloot, 1967-2007(2): SAS *Drakensberg* en SAS *Outeniqua*', *Journal for Contemporary History*, vol. 33, no. 1, June 2008, pp. 144-145.

96. Line-book: SAS *Protea*; SANDF Documentation Service, Log-book of SAS *Protea*; *Die Volksblad*, 19 March 1993, p. 9; and *Navy News*, vol. 12, May 1993, p. 16.

97. *Navy News*, vol. 12, August 1993, pp. 8-11, 14-15; *The Natal Mercury*, 25 May 1993, p. 5; and *Paratus*, vol. 44, no. 6, June 1993, p. 15.

98. *Paratus*, vol. 44, no. 8, August 1993, p. 32, *Paratus*, vol. 44, no. 9, September 1993, pp. 26-28; information supplied by Captain EH Lochner (SAS *Outeniqua*); *Paratus*, vol. 44, no. 11, November 1993, pp. 18-20; *Paratus*, vol. 44, no. 12, December 1993, pp. 37-38; and *Navy News*, vol. 13, January-February 1994, p. 10.

99. *Navy News*, vol. 13, March 1994, pp. 11-13; *Die Burger* (The Citizen), 5 January 1994, p. 1; *Die Burger* (The Citizen), 27 January 1994, p. 17; *The Star*, 5 January 1994, p.1, *The Star*, 28 January 1994, p. 5; and Wessels, 'Buitelandse vlagvertoonbesoeke…(2)' (Nomination Visits…vol. 2), pp. 99-101.

100. *Navy News*, vol. 13, June 1994, p.18, *Navy News*, vol. 13, October 1994, pp. 12-16; *Salut*, vol. 1, no. 2, June 1994, pp. 50-51; *Salut*, vol. 1, no. 6, October 1994, pp. 26-28; and *Ad Astra*, vol. 15, no. 10, October 1994, pp. 18-19; .

101. SA Naval Museum, Report of Proceedings – Operation Maroela 02 to 29 September 1994; *Navy News*, vol. 13, November-December 1994, pp. 9,12-13; and *Sunday Times*, 16 October 1994, p. 4 and *Navy News*, vol. 13, October 1994, p. 2.

102 *Navy News*, vol. 14, May 1995, pp. 12-14.

103. *Navy News*, vol. 14, September 1995, p. 4.

104. *Salut*, vol. 2, no. 10, October 1995, pp. 4, 34-36; and *The Mercury*, 4 July 1995, p. 2.

105. *Navy News*, vol. 15, September 1996, p. 19.

106. *Navy News*, vol. 15, October 1996, pp. 13-18; and *Salut*, vol. 3, no. 11, November 1996, pp. 58-59.

107. See A Wessels, 'Buitelandse vlagvertoonbesoeke aan Suid-Afrikaanse hawens (3): die eerste dekade van die nuwe RSA, 1994-2004' [Nomination Visits to South African Ports Vol 3: the First Decade of the New South Africa, 1994-2004], *Journal for Contemporary History*, vol. 32, no. 1, June 2007, pp. 223-227.

108. *Navy News*, vol. 16, no. 3, 1997, pp. 4-7, 10-23.

109. *Navy News*, vol. 16, no. 5, 1997, p. 7 and 16(6), 1997, p. 32; *Navy News*, vol. 17, no. 1, 1998, pp. 12-17; *Salut* 5(1), January 1998, pp. 32-34; *Salut*, vol. 6, no. 1, January 1999, p. 33; and *Defense Affairs of Africa and the Middle East*, vol. 1, no. 3, November 1998, p. 13.

110. *Navy News*, vol. 18, no. 4, 1999, pp. 10-15; *The Mercury*, 21 April 1999, p. 7; *The Mercury*, 28 April 1999, p. 9; and *Daily News*, 14 April 1999, p. 1.

111. *Navy News*, vol. 18, no. 7, 1999, p. 15; and *The Mercury*, 12 May 1999, p. 9.

112. *Navy News*, vol. 19, no. 6, 2000, pp. 29-31; *Salut*, vol. 7, no. 9, September 2000, p. 63; and *Salut*, vol. 7, no. 12, December 2000, p. 37.

113. Wessels, 'Buitelandse vlagvertoonbesoeke aan Suid-Afrikaanse hawens (3), pp. 230-237.

114. *Navy News*, vol. 20, no. 2, 2001, p. 22; *Navy News*, vol. 20, no. 4, 2001, p. 16; and *Navy News*, vol. 20, no. 5, 2001, p. 14.

115. Line-book: SAS *Outeniqua* (consulted at the SA Naval Museum); 'SA Navy. SA Vloot. SAS *Outeniqua*. Ile de la Réunion. Ship's log', <www.simonstown.com/touris/navy.otqlogs.htm> (2002); and *Navy News*, vol. 20, no. 6, 2001, pp. 14-16.

116. *Navy News*, vol. 21, no. 2, 2002, p. 15; and *South African Soldier*, vol. 9, no. 5, May 2002, pp. 8-10.

117. Wessels, 'Buitelandse vlagvertoonbesoeke aan Suid-Afrikaanse hawens (3)', pp. 237-242; and *Navy News*, vol. 23, no. 4, 2004, p. 6; seen by the author in Durban, 28 December 2004 – 1 January 2005.

118. *Navy News*, vol. 21, no. 4, 2002, pp. 20-22; and *The Mercury*, 7 June 2002, p. 3.

119. *Navy News*, vol. 22, no. 1, 2003, p. 12; SABC TV2 news bulletin, 21 December 2002; and *Navy News*, vol. 23, no. 3, 2004, p. 24.

120. Several SABC and etv news bulletins, 13 April 2001; Bennett et al, *South Africa's Navy*, pp. 61, 63; *SA Shipping News and Fishing Industry Review*, vol. 56, no. 3, May 2001, p. 12; SAN Info Bulletin 16/01, 17 April 2001 and 46/01, 22 November 2001; *South African Soldier*, vol. 8, no. 2, June 2001, p. 20; *Navy News*, vol. 20, no. 2, 2001, pp. 2-4.

121. *South African Soldier*, vol. 12, no. 11, November 2005, p. 22; SABC TV3 news bulletin, 5 September 2003; and *Navy News*, vol. 22, no. 6, 2003, p. 11.

122. *Navy News*, vol. 22, no. 6, 2003, pp. 16-18, 20, 22-23; *Navy News*, vol. 23, no. 2, 2004, pp. 17-19, 22-27; *Navy News*, vol. 23, no. 3, 2004, pp. 15-22; *Navy News*, vol. 23, no. 5, 2004, pp. 21-28; *Navy News*, vol. 25, no. 2, 2006, pp. 22-23; *Navy News*, vol. 26, no. 3, 2007, pp. 18-23; *Navy News*, vol. 28, no. 3, 2008, pp. 16-17; *South African Soldier*, vol. 11, no. 5, May 2004, pp. 18-19; *South African Soldier*, vol. 11, no. 9, September 2004, p. 5; and *South African Soldier*, vol. 11, no. 11, November 2004, pp. 18-20.

123. See, for example, *Salut*, vol. 6, no. 1, January 1999, pp. 14-19; *The Mercury*, 19 November 1998, p. 1; *Beeld*, 19 November 1998, pp. 1-2; and *The Independent on Saturday*, 20 January 2001, p. 1.

124. See, for example, *Navy News*, vol. 29, no. 1, 2010, pp. 16-20.

125. *Navy News*, vol. 25, no. 4, 2006, pp. 26-31; *Navy News*, vol. 26, no. 3, 2007, pp. 26-33; *Navy News*, vol. 27, no. 6, 2007, pp. 18-21; and *Navy News*, vol. 28, no. 6, 2008, p. 20.

126. See, for example, *Navy News*, vol. 24, no. 3, 2005, pp. 16-17; *Navy News*, vol. 24, no. 4, 2005, pp. 7, 14; *Navy News*, vol. 24, no. 5, 2005, p. 7; *Navy News*, vol. 25, no. 4, 2006, p. 15; and *Navy News*, vol. 26, no. 1, 2007, p. 5.

127. *Navy News*, vol. 25, no. 6, 2006, pp. 18-23.

128. Information supplied by Mr Vic Jeffery, HMAS *Stirling,* West Australia, 8 July 2003.

129. *Navy News*, vol. 24, no. 4, 2005, p. 7; *Navy News*, vol. 24, no. 5, 2005, pp. 24-31; and *The Mercury*, 22 July 2005, p. 7. For the Fleet Review and the Festival of the Sea, see A Wessels Private Document Collection, Portsmouth 28.6.2005-3.7.2005 (files): several brochures.

130. *Navy News*, vol. 7, no. 6, 2007; pp. 12-17; *The Mercury*, 29 August 2007, p. 4; *The Mercury* 5 September 2007, p. 1; and *The Mercury,* 12 September 2007, p. 4.

131. *Navy News*, vol. 28, no. 3, 2008, pp. 18-21; information supplied by Commander Gerard Wessels, 23.4.2008; *The Mercury*, 23 April 2008, p. 4; and *The Mercury*, 25 April 2008, p. 14.

132. S Saunders (ed), *Jane's Fighting Ships 2008-2009*, Coulsdon, 2008, pp. 8, 480, 525, 532-533. Two *Namacurra*s were also donated to Angola (2006).

133. See S Saunders (ed), *Jane's Fighting Ships 2009-2010*, Coulsdon, 2009, pp. 733-739.

134. See S Saunders (ed), *Jane's Fighting Ships 2009-2010*.

135. In 1990, the RN still had 32 submarines, 3 aircraft carriers, 13 destroyers and 36 frigates. See Sharpe (ed), pp. 675-690. In 2010-2011, the RN has been further downsized, with its three aircraft carriers as well as two submarines, three destroyers and four frigates withdrawn from service. S Saunders (ed), *Jane's Fighting Ships 2011-2012*, Coulsdon, 2011, pp. 871-879.

136. For more on the African rapid reaction force see, for example, A Wessels, 'n Snelontplooiingsmag vir Afrika: Enkele Historiese Perspektiewe', *Journal for Contemporary History*, vol. 28, no. 1, June 2003, pp. 1-15; and A Wessels, 'A Rapid Reaction Force for Africa, With Special Reference to Southern Africa and the Role that the South African National Defence Force Can Play', in T. Potgieter (ed), *Regions, Regional Organisations and Military Power*, Stellenbosch, 2008, pp. 603-613.

8 The Anglo-South African Simonstown Agreement

Allan du Toit

The 1955 exchange of letters between the governments of the United Kingdom and South Africa, collectively known as the Simonstown Agreement, is an excellent example of Cold War Commonwealth naval cooperation during the era of post-war British imperial drawdown and decline. The agreement provided for the transfer of the British naval base at Simon's Town to South African control and led to the significant expansion of the South African Navy (SAN) and maritime elements of the South African Air Force to assume an increasing responsibility for the collective defence of the strategically important sea route around the Cape of Good Hope.

Signed in the aftermath of World War II (WWII), at a time of increasing Soviet expansionism and influence, with Britain still facing significant post-war financial hardships and South Africa, one of the original Dominions, taking an increasingly nationalistic path, the agreement on naval cooperation was mutually beneficial to both parties, but particularly favourable to Britain. It established a special relationship between the Royal Navy (RN) and SAN and, notwithstanding the intense political controversy in Britain, and indeed within the Commonwealth for much of its existence, the Agreement remained in place for some 20 years and served as a very useful force multiplier for safeguarding the strategically important cape sea route.

The cape sea route remains the only practical alternative to the Suez Canal, which was closed for an extended period during the life of the agreement following the 1967 Arab-Israeli Six Day War, and it is the only suitable route for large deep-draught crude oil tankers sailing from the Middle East to Europe which cannot transit the canal.

As part of Great Britain's global presence, Simon's Town was progressively developed as an important naval base and dockyard during the nearly 150 years that it was occupied by the RN. After the second British occupation of the cape in 1806, which finally ended Dutch rule, the RN established a sheltered base for the ships of the Cape of Good Hope Station in Simon's Bay, in order to control the sea route to India and the Far East.[1]

As the importance of the cape sea route increased, the small base at Simon's Town was slowly developed, eventually reaching the stage in the late 1800s where significant expansion of the harbour and base was required.[2] To this end, the Cape Colonial Government passed the *Simon's Town Naval Defence Act 1898*, which authorised the development of the port as a much needed major naval base for the RN on the important cape sea route.[3] The extensive new dockyard which included a

graving dock and sheltered tidal basin was finally completed in 1910, the year that the four Southern African colonies joined to form the Union of South Africa (the Union), and Simon's Town became the principal base for the vessels of the Cape of Good Hope and West Coast of Africa Station.[4] Although the former Natal and Cape Naval Volunteer units were amalgamated by statute to form the South African Division of the Royal Naval Volunteer Reserve in 1913, the new Union continued to rely entirely on the RN for the protection of its trade and any external attack by sea.[5]

During World War I (WWI), the Cape of Good Hope Squadron, under the command of Rear-Admiral HG King-Hall, RN, played an important role in cape waters and in support of operations against German South West Africa and German East Africa, including the destruction of the German cruiser *Königsberg* in the Rufiji delta.

Shortly after the war, Admiral of the Fleet Lord John Jellicoe, RN, recommended that South Africa should provide and maintain a squadron to keep open the trade route round the cape. The Union Government, however, considered this to be beyond South Africa's limited human and financial resources. Although a small full-time naval service was established in 1922, with the arrival of the country's first three naval vessels from Britain,this nascent service was short-lived.[6] As a result of the Wall Street crash of 1929, which heralded in the Great Depression of the 1930s, Union defence expenditure was severely cut back, South Africa's infant navy being the main victim. As a result, South Africa remained almost entirely dependent on the RN for the protection of its commerce and shores between the wars.[7]

Also after WWI, agreement was reached between the UK and South African governments that War Department lands and buildings in South Africa should be transferred to the Union Government subject to specific reservations preserving for the use of the Admiralty lands and buildings at Simon's Town required for naval purposes. The transfer was given legal sanction by a Union Parliament act in 1922, which provided for the conclusion subsequently of an agreement dealing with the lands and property retained for the use of the Admiralty. This agreement was concluded in 1930. It laid down in detail the lands and properties involved and confirmed that although the freehold title to the lands rested with the Union Government, the Admiralty was recognised as the perpetual user for naval purposes.[8]

Additionally, arrangements, under the so-called Smuts-Churchill agreement, were made between the South African Prime Minister General Jan Smuts and the Colonial Secretary Winston Churchill in 1921 to transfer responsibility for the land defences of the Cape Peninsula, including the land defences of Simon's Town to the Union Government. In reaching this agreement Britain formally requested and received assurance that:

> The Union Government would keep the naval station in such a state of
> defence that it would at all times be able to discharge its functions as
> a naval link in the sea communications of the British Empire. [9]

The importance of Simon's Town and the cape sea route was once again highlighted during WWII when the Mediterranean route became too dangerous to use. As the war escalated in Abyssinia and the Western Desert, after the fall of France and Italy's entry into the war, the cape sea route became of vital importance to the Allied cause after shipping routes between Gibraltar and Suez were severely disrupted. In December 1941, when the Japanese declared war on Great Britain and the United States, the Commander in Chief (CinC) South Atlantic, who had moved his headquarters to Freetown in Sierra Leone when war broke out, returned once again to set up his headquarters in Simon's Town.

Although German raiders operated in cape waters early during the conflict, and also laid mines, the submarine threat in South African waters did not become a serious problem until October 1942 when the enemy launched widespread submarine attacks on shipping using the routes round the cape. Thirteen ships were sunk in the first four days of the offensive.[10] Despite the enormous distances between Germany and South Africa, German records show that no fewer than 29 U-boats operated in South African waters at various times during the war.[11]

Although South Africa had no fighting ships of her own at the outbreak of war in 1939, the establishment of an efficient seagoing force and the rapid expansion of the South African Naval Forces during the conflict was quite remarkable, and at the peak period of hostilities in 1944, the South African Fleet consisted of 78 vessels.

Towards the end of WWII, the South African Government decided to retain a permanent seagoing fleet for the defence of South Africa and the sea route around the cape after hostilities ended. With the onset of the Cold War and the developing conflict in the Middle East, which threatened the alternate sea route via the Suez Canal, the strategic importance of the naval base at Simon's Town gained in importance.

After coming to power in the 1948 general election, the National Party government in South Africa, under Dr Daniel Malan, pressed with growing urgency for the Royal Naval Base at Simon's Town to be transferred to South African control. The motives behind the new South African Government's initiative in pressing for control of the base to be transferred were essentially political and arose from the traditional attitude of the National Party. The 1921 Simon's Town arrangements were frequently criticised by the National Party when in opposition in the 1920s and 1930s, on the grounds that British use of the base in war and South Africa's responsibility for its land defences would make it impossible for South Africa to remain neutral and that the South African Government and Parliament were thus deprived of the sovereign right to decide freely the supreme question of peace or war for their own country.[12]

Indeed, the question of Simon's Town had been raised in the course of the debate in the Union Parliament in September 1939 on whether or not to declare war on Germany. The South African Prime Minister at the time, General James Barry Munnik Hertzog, urged neutrality whilst the leader of the opposition, Smuts, involvement. Hertzog argued that the Union could both remain neutral and also carry out its undertakings in regard to Simon's Town, but if later drawn into the war it would be on the side of the Allies. The broad argument taken by Smuts was that Union neutrality in the event of a war in which Britain was engaged was inconceivable, not only because of the Commonwealth relationship, but also because the Smuts-Churchill agreement involved the Union in an undertaking which, if they were to carry it out properly, would inevitably involve them in armed resistance to an enemy of Britain. In the event, Hertzog was defeated on the main issue and resigned, Smuts became Prime Minister and the Union Parliament decided on an immediate declaration of war on Germany.[13]

With the development of a less isolationist policy post-war, leading to a declaration by the newly elected National Party government of their readiness to take part in a war against Communist aggression, the neutrality issue had become less urgent and less important. But the transfer of the naval base to South African control would clearly, in view of the past controversy, be a significant political achievement for the Nationalist government, and Fran Erasmus, the new Minister of Defence, realised that success in this would greatly enhance his personal reputation within the party and with his Cabinet colleagues.[14]

The question was first raised in informal discussions with UK ministers during a visit that Erasmus paid to Britain in July 1949. At that time, the Admiralty was under great pressure to secure post-war economies and there was some tendency to look at the possibility of transfer in the light of the economies that would follow. However, the matter was handled very cautiously with Erasmus and nothing definitive was discussed. Later the matter was examined more fully between British departments and ministers concerned, and it became very clear that, partly because of the changed world defence situation and partly because of the force of other considerations, financial considerations could not be regarded as a decisive factor in any decision to transfer Simon's Town naval base to South African control.[15] It was assessed that full and free use of the base would be essential for the United Kingdom in time of war and that the wireless transmission stations at the Cape formed a key point in the worldwide maritime wireless organisation.[16]

In September 1950, Erasmus again raised the subject, without notice. He was informed that the Bristish Government would be prepared to have discussions on the subject if the Union Government wished to raise it, but the Union Government should first provide detailed proposals in writing. This they did in February 1951 and there were further discussions, at the insistence of Erasmus, with British ministers in June 1951 on the sidelines of the Commonwealth Defence Ministers meeting in London.[17]

Although he appeared to accept British requirements for transfer, correspondence from Erasmus, after his return to South Africa, raised a number of difficulties. The most important of these was the unwillingness of the Union Government to provide an unqualified assurance that the base at Simon's Town would in all circumstances be available to the United Kingdom in war. The South African's were only prepared to promise that it would be available to the United Kingdom in any war in which they were fighting at Britain's side. In any event, the Attlee Labour government lost the general election shortly afterwards and the whole question of the future of Simon's Town stalled.[18]

In a Defence Committee Memorandum in December 1951, the Secretary of State for Commonwealth Relations in the Churchill Conservative government Lord Hasting Ismay recommended continuing discussions with the South African Government and argued that there was 'great force in the South African argument that, as a matter of status, the Simonstown arrangements (were) no longer appropriate'. He drew the comparison that other Commonwealth countries such as Australia and Canada had long since taken over full control of the naval bases in their countries, and that there was 'no question that a Commonwealth country nowadays has the right to decide for itself whether to remain neutral or not'. He also made the point that the South African Government had more than once declared that South Africa could not remain neutral in any war against Soviet Russia, and that the Union government had undertaken in time of war against any form of Communist aggression, to despatch ground and air forces to the Middle East.[19]

Ismay proposed that in any further discussions with the South African Government, the United Kingdom should put in the forefront the practical question of how to secure conditions which would ensure the continued efficiency of the base under South African control, and that Britain should emphasise the need for building up an efficient SAN and Union Government acceptance of 'full naval responsibilities in accordance with the normal pattern of Commonwealth development'.[20]

The question of the RN Base at Simon's Town was subsequently considered by the Defence Committee in March 1952 and it was agreed that no action should be taken to re-open the negotiations with the South African Government. The Committee Chair and Prime Minister, Winston Churchill, was not persuaded that it was necessary to reopen the question of Simon's Town and that the United Kingdom had the legal right of perpetual user on which it could justifiably stand firm. Churchill argued that it was strategically necessary for the RN to have facilities in Simon's Town in any major war, and perhaps more particularly in a war in which South Africa was neutral. In his view, Simon's Town was an essential link in imperial communications and there was no obvious alternative to it. He was in favour of taking no fresh initiatives and if it was raised by the South African Government, he would resist, on the basis of the United Kingdom's legal rights, any proposal for transfer without an unqualified assurance that facilities would be available to Britain in both peace and war.[21]

With Churchill's opposition to its transfer, and the South Africans preoccupied with internal politics, the whole issue of Simon's Town largely remained dormant until early 1954 when Erasmus let it be known that he wanted to resume negotiations on Simon's Town and it was agreed that he should be invited to London for Defence talks.[22] To Britain's surprise, he arrived in London prepared, with the full authority of the Union cabinet, to give Britain and its allies the unqualified assurance about their right to use the base in war as well as peace.[23]

Churchill, however, remained unconvinced, and continued to oppose any transfer. He was 'reluctant to contemplate any transaction which would be presented as yet another surrender of rights and responsibilities'. Indeed, Admiralty doubts about the South African Government's unqualified assurance simply reinforced Churchill's opposition to the transfer of the Simon's Town naval base.[24] He did, however, agree in October 1954 to an Admiralty mission to South Africa to jointly formulate a detailed plan of transfer.

The joint South African/Admiralty working party, which with only one significant disagreement, 'produced a plan capable of achieving the objectives set in its terms of reference and practical in the sense that it should work without a disastrous decline in efficiency', submitted their report to the Secretary of the Admiralty in November 1954. The only major disagreement in the report, which was subsequently resolved, related to the position and responsibilities in peace of the RN CinC, in particular his direct access to Union ministers, the South Africans preferring that the formal channel should be government to government. The joint working party agreed a comprehensive plan between them for:

- the combined use of Simon's Town by the RN and SAN in peace and in war (even if South Africa were neutral in some non-communist war, a most remote contingency), on the understanding that the base would also be available in war to the allies of the United Kingdom

- the gradual assumption of responsibility by the SAN for the operation and administration of the base for combined use

- the assumption by South Africa of responsibility in war for the operational and administrative control of a local sub-area of a South Atlantic Strategic Zone

- that a RN officer would continue as CinC South Atlantic in peace, with headquarters and communications at the Cape, and that his designation in war would be Commander of the South Atlantic Strategic Zone.[25]

The conclusions of the joint working party were subsequently considered by the Defence Committee in December 1954, and while remaining uncommitted to a final decision, Churchill approved a proposal for a further round of discussions with Erasmus at ministerial level, on the practical issues involved in reaching an agreement.

Erasmus subsequently visited the United Kingdom in June 1955 for discussions with ministers, by which time Eden had finally taken over as prime minister and his conservative government had secured a new mandate at the polls. These discussions led to the British cabinet choosing to conclude an agreement on Simon's Town and naval collaboration with South Africa and resulted in the exchanges of letters on defence matters between Erasmus and Selwyn Lloyd, the British Minister of Defence, on 30 June 1955 which became known collectively as the 'Simon's Town Agreement'. These exchanges, which were registered with the United Nations (UN), embodied agreements and understandings on three key subjects:

- Memorandum on the need for international discussions with regard to regional defence.

- Agreement on the defence of the sea routes around Southern Africa.

- Agreement relating to the transfer of the Simon's Town Naval Base and arrangements for its future use.[26]

The memorandum on regional defence stated that the sea routes 'must be secured against aggression from without' and the defence of South Africa against external aggression lay in the Middle East as well as in Africa itself.[27] Britain undertook to contribute forces for the defence of these areas including southern Africa, as did South Africa, who would build up a land and air task force for use outside the country against external aggression.[28] It is, however, of significance that South Africa, unlike the other old Dominions (Australia, Canada and New Zealand) had no defence arrangements with the United States or any share in the various regional defence pacts established in the post-war period. Although there had been an attempt in 1951 to institute a regional defence treaty for South and East Africa, nothing came of this initiative.[29]

The Simonstown Agreement, which was to remain in force until such time as the two governments decided otherwise by mutual agreement, was particularly favourable to Britain. Although it created no political obligations for either party and no guarantee to the other in terms of a defensive alliance, the agreement recognised 'the importance of sea communications to the well-being of their respective countries in peace and to their common security in the event of aggression'. Although it met the South African Government's strong desire to have the last British military base on South African soil transferred to South African control after a 150 year British presence, it importantly provided for the continued use of the base at Simon's Town by the RN in peace, and by Britain and its Allies in any war in which the United Kingdom was involved, even in a war in which South Africa was not involved. It significantly increased commonality and interoperability between the two navies and in time of war placed South African maritime forces under the command of the British CinC South Atlantic, who continued to fly his flag at the Cape after the signing of the agreement and who would be responsible for war planning for both countries.[30]

The agreement established a South Atlantic Strategic Zone approximating to the British South Atlantic Station, including the Mozambique Channel, in which both the RN and SAN would operate under the operational authority of the CinC who would be responsible for the command and control of maritime operations including the naval control of shipping in the South Atlantic and southern Indian Oceans. Within this zone lay a South African Area which remained the direct responsibility of the SAN.[31] In addition, naval communications facilities were to be handed over to the SAN, after which the Union Government would continue to meet the requirements of the RN.[32]

From a fiscal perspective, while Britain retained full access to Simon's Town, the agreement imposed considerable obligations on South African and absolved Britain from the costly upkeep and modernisation of the base and other maritime facilities at the cape, including access to strategic naval communications, fuel and ammunition stocks and over-flying rights. Finally, from an economic perspective, the agreement greatly benefited British industry with significant South African orders following for warships, helicopters and maritime patrol and strike aircraft.

Following the signing of the agreement, the developing SAN vacated its base at Salisbury Island in Durban and moved to Simon's Town, and on 2 April 1957, the British flag was lowered for the last time at HM Naval Dockyard Simon's Town.[33] The First Lord of the Admiralty, the Earl of Selkirk, represented the British Government at the ceremony marking the transfer. In a speech at the ceremony he said that:

> We believe the agreement we have reached in these matters is thoroughly sound, will operate to our mutual advantage and promote closer understanding, if that is possible, between the SAN and Royal Navy.[34]

The Simonstown Agreement initiated an era of unprecedented expansion and modernisation of the SAN between 1955 and 1963, which virtually trebled the size of the fleet. Based on the experience of both world wars, and in the light of an increasing Soviet threat, the expansion of the SAN was almost exclusively focused on the acquisition of anti-submarine and mine countermeasures capabilities. Effective professional cooperation was further enhanced by the fact that both navies trained together and possessed ships with similar performance and fighting equipment. It resulted in the rapid expansion and development of a small but highly professional, efficient and well equipped Commonwealth navy, able to train and effectively take its place alongside the RN and other Commonwealth and Allied navies during the Cold War.[35]

Within the terms of the agreement, South Africa purchased five Ford class seaward defence boats, ten Ton class coastal minesweepers, one Type 15 anti-submarine frigate and three new modified Type 12 anti-submarine frigates from the United Kingdom. Because of rising costs, only four frigates were purchased instead of the six originally envisaged. In addition to these newly acquired ships, which

virtually trebled the size of the fleet, many of the older vessels in service were also progressively upgraded locally. Most notable was the conversion of the two war-built W class fleet destroyers that were upgraded to Type 16 configuration between 1962 and 1966 but with the addition of a flight deck and hangar that could accommodate two Westland Wasp anti-submarine helicopters. This conversion compensated for the reduction in frigate purchases from the United Kingdom and made them most useful ships.[36]

At the same time the South African Air Force acquired Avro Shackleton long-range maritime patrol aircraft in 1957 to replace its ageing fleet of Sunderland flying boats, Westland Wasp anti-submarine helicopters in 1964 for operating from the converted W class destroyers, and Buccaneer maritime strike aircraft in 1965.[37]

In the 1960s, as the National Party's racial policies began to create more and more ill will abroad, South Africa was becoming isolated from the international community and whilst the threat of communism and communist-inspired insurgency in Africa also appeared to be growing, it became increasingly difficult for the western powers to consider any formal alliance with South Africa. When South Africa became a republic in 1961 and left the Commonwealth, numerous African states were in the process of achieving independence. These states began to call for an arms embargo against the new republic and the cancellation of the Simonstown Agreement.[38]

Despite South Africa's departure from the Commonwealth and increasing international pressure, the base at Simon's Town and the cape sea route were still important factors in British foreign policy, as the 1956 Suez crisis made clear, and both Great Britain and South Africa had a common interest in maintaining defence links. As a result, Britain continued to supply arms to South Africa in terms of the Simonstown Agreement which was re-affirmed in a further informal exchange of letters between Harold Watkinson and Jim Fouché, the British and South African Defence ministers, in 1961-62.[39]

However, after the election of the Wilson Labour government in October 1964, Britain refused to supply further arms to South Africa. Whilst this ban included any new orders for maritime aircraft and naval vessels and equipment, the British Government was still prepared to honour existing contracts and to provide spares and ammunition within the terms of the Simonstown Agreement. This concession was later extended to include licences for the sale of additional Wasp helicopters in 1966 to replace aircraft written off during normal operations.[40]

At that stage, all South African naval vessels were of British design and construction. For reasons of compatibility and logistics, and because of the close traditional links with the RN, South Africa wished to place orders for submarines and replacements for its Loch class and Type 15 frigates in the United Kingdom. However, despite its obligations under the terms of the Simonstown Agreement, the British Government

was not prepared to approve the construction of any additional vessels for the SAN in the United Kingdom.[41] As a result, South Africa, which would have preferred to acquire *Oberon* class submarines from Britain, turned to France instead for the provision of three *Daphné* class submarines.

In spite of the new British Government's determination not to enter into arms sales with South Africa, the strategic importance of the naval base at Simon's Town remained undiminished. As a result, the agreement continued and links between the RN and SAN remained strong. Before 1964, day-to-day training was carried out between SAN vessels and RN vessels based at Simon's Town. An annual medium sized exercise, which sometimes also included naval forces from the United Sates, Portugal and France, was also conducted, with the South African ships performing with great credit, reflecting the high standards of operational efficiency achieved as a result of the Simonstown Agreement. However, in November 1964, the British Government decided that while normal manoeuvring and practising between ships in company should continue, major exercises should stop but that there would be special arrangements for anti-submarine training.[42]

The Simonstown Agreement was modified by mutual agreement in 1967 following the 1966 British Defence Review, which resulted in the closure of the South Atlantic and South America Station as part of a steady contraction of the RN's overseas commands. As a result, at sundown on 11 April 1967, the last CinC South Atlantic and South America, Vice Admiral JMD Gray, RN, hauled down his flag. This marked the end of the virtually continuous presence of a British Flag Officer at the cape, except for a short period during the Napoleonic wars, since Admiral Sir Keith Elphinstone, RN, sailed into Simon's Bay with nine ships of the line in 1795.[43] At the same time, the prestigious Mediterranean Command was abolished and the role of the CinC Home Fleet was expanded to cover command of all ships west of Suez.

Following the closure of the South Atlantic and South America Command, and the revision of the Simonstown Agreement, the CinC Home Fleet (and later the CinC Fleet) became responsible for the South Atlantic and a much smaller organisation under a commodore, known as Senior British Naval Officer South Africa. This post was established as the CinC Home Fleet's representative at HMS *Afrikander* at Youngsfield near Cape Town to continue the existing liaison with the SAN.[44] At the same time, the last remaining RN frigate stationed at Simon's Town, HMS *Lynx*, was withdrawn and the Chief of the SAN assumed the additional appointment of Commander Maritime Defence and assumed greater responsibility for the South African area in times of war.[45] Most of the other provisions of the agreement, however, remained unchanged, except that a caveat was made which required mutual agreement between the United Kingdom and South African governments before the facilities could be used in a war not involving South Africa.[46]

With the withdrawal of the RN frigate on station in South Africa, the United Kingdom assured the South African's that they would be prepared to continue taking part in bilateral anti-submarine training on an annual basis subject to the availability of ships and submarines and to prevailing political circumstances.[47]

Apart from joint training, the RN also cooperated with the South Africans in planning naval control of shipping measures. Although the NATO area did not extend south of the Tropic of Cancer, there was a NATO world-wide naval control of shipping organisation with the area around southern Africa designated NATO Area Bravo for which the United Kingdom had planning responsibility in cooperation with South Africa, France and Portugal.[48]

The strategic importance of the cape sea route and the naval base at Simon's Town was reinforced not long afterwards following the closure of the Suez Canal in the aftermath of the Six Day War in the Middle East in June 1967. By way of example, the average number of sea-going vessels calling at South African ports prior to the Six Day War was 7000 a year. In 1968, this had increased to around 15,000 and the average number of ocean-going vessels rounding the cape in both directions was over 20,000 a year, including around ten tankers a day *en route* from the Persian Gulf to Europe.[49] Closure of the canal also forced Britain to build bigger and faster tankers specifically for the cape route.

Although the long retreat from Empire was well underway, significant commitments, particularly east of Suez remained. The RN consequently made considerable use of South African ports to support the constant deployment of ships required to meet these commitments, and continued to do so even after the withdrawals from Singapore and the Gulf were completed in the early 1970s.[50] During this period there were on average about 30 RN visits to South Africa annually, with a number of the visits involving more than one ship or submarine.[51]

As a result of the prolonged closure of the Suez Canal, the political complications in the Middle East and Africa, together with the recent changes in British defence policy and force levels East of Suez, a re-examination of the importance of the cape sea route was undertaken in Whitehall. A paper on the importance of the route was subsequently prepared by the then Director of Naval Plans, Captain Henry Leach, RN, in September 1968.[52]

In December 1969, the British Government informed South African that, in accordance with their interpretation of the UN resolutions of 4 December 1963 and 18 June 1963, they were not prepared to supply additional Wasp helicopters requested by South Africa under the terms of the Simonstown Agreement, to replace those lost or to equip the Type 12 frigate conversions underway. This produced adverse comment in South Africa, notably from the Minister of Defence PW Botha. The South African Government subsequently asked Britain to indicate its attitude towards its responsibilities under the Simonstown Agreement. In its reply, the British Government indicated that the agreement was of value, and that it considered the United Kingdom's obligations

under it had been and were being properly discharged.[53] The irony was that following the 1966 Defence Review, Britain handed over a greater responsibility for the defence of the cape sea route to South Africa but refused to sell her the maritime arms needed to make the defence effective.

Nonetheless, South African personnel continued to attend RN courses and small scale combined maritime exercises and weapons training periods continued in South African waters as well as regular interaction with ships and submarines on their way to or from the Far East Station. These activities, which at the United Kingdom's request, were conducted away from normal sea lanes and without publicity, continued to place particular emphasis on anti-submarine warfare. They were planned by the SAN working in close liaison with the Senior British Naval Officer South Africa and his staff, and were designed to meet the particular training requirements of all participating units.[54]

During the autumn of 1969, references began to appear in the British press about exercises carried out with the SAN, and at the beginning of 1970 the then British Minister of Defence, Denis Healy, for the first time admitted in Parliament to their taking place and described their scope.[55] After the extent of Anglo-South African naval cooperation became public knowledge, press coverage of these activities progressively increased, ultimately to the detriment of the agreement.

Following the election of a Conservative government in the United Kingdom, led by Edward Heath in June 1970, South African hopes were revived that orders for up to six new frigates could be awarded to British yards. At that stage, the SAN was interested in acquiring at least three broad-beam *Leander* class frigates or Vosper frigate derivatives. South Africa also had an outstanding requirement to procure additional Wasp helicopters to operate from the converted Type 12 frigates, which the previous Labour government had refused to provide.[56]

In July 1970 the British Government stated its intention to rebuild Britain's 'vital defence interests' in South Africa at a time when Russian penetration into the Indian Ocean was thought to be putting commerce at risk particularly the flow of oil from the Middle East and to resume limited arms sales to help the Republic defend the sea route around the cape in accordance with the spirit of Britain's obligations under the Simonstown Agreement.[57] In essence, the British Government was prepared to continue to supply South Africa with spares and other items which were being supplied by the previous Labour government, considered that there was a legal obligation to complete the equipment of the frigates already sold with anti-submarine helicopters and undertook to be prepared to consider orders for equipment and arms necessary to maintain South Africa's maritime defences at their present level of efficiency provided that arms supplied would not be used for any other purposes other than the defence of the sea routes.[58]

Whilst the Heath government, which was under considerable pressure from within the Commonwealth not to sell arms to South Africa, was considering accepting naval orders from South Africa, the Labour opposition stated that any South African orders placed in the United Kingdom would be cancelled if they were subsequently returned to office.[59]

While South Africa duly ordered an additional seven Wasp helicopters and various items of naval equipment from Britain, the Conservative government made it clear that it was not politically opportune to accept orders for frigates at that time. The SAN was meanwhile also having second thoughts as it was not prepared to run the risk of ordering frigates which would not be completed before the next general election in Britain. This proved a wise decision.[60]

Meanwhile, the growth of the South African Fleet, in particular the introduction of a submarine capability in the early 1970s, led to major expansion within the Simon's Town Naval Dockyard. In 1973, a new sophisticated joint underground operational facility in the mountains at Silvermine outside Cape Town was opened for monitoring shipping passing around the cape and commanding and controlling operations.[61]

Under the Heath government, regular combined maritime exercises and weapons training periods between the RN and SAN were reinvigorated. In July 1973, SAN units, together with maritime aircraft from the South African Air Force, exercised with the first of the new-style British group deployments east of Suez, which replaced the smaller task unit and single ship deployments of the past. This task group consisted of the helicopter cruiser HMS *Tiger*, the nuclear powered attack submarine HMS *Dreadnought*, three frigates as well as two fleet auxiliaries. It was also the first occasion on which a nuclear-powered submarine visited Simon's Town, one of the few ports where visits by nuclear submarines forming part of the group deployments east of the Cape area could be made.[62]

With the return of the *Tiger* group from the Far East in November 1973, combined exercises were again carried out with the SAN. In addition to South African Air Force Mirage, Buccaneer and Shackleton aircraft, Nimrod long-range maritime patrol aircraft from the Royal Air Force also deployed to the cape and participated in the exercise.[63]

Following the return of a Labour government in the March 1974 British general election, 'operationally necessary ship visits' to politically sensitive countries, including South Africa, came under closer scrutiny as well as the vexed issue of arms sales to the Republic. The new British Government quickly reimposed a total arms embargo and cancelled the Wasp order, which resulted in the last aircraft not being delivered.[64] As a result of this decision, the South African Government formally asked the British Government whether they wished to continue to operate the Simonstown Agreement in its present form. At the same time, the UK Ministry of Defence sought ministerial direction on further group visits to South African ports and other connected matters

such as training and exercises under the Simonstown Agreement. It was argued that these visits were necessary to permit joint training with the SAN in order to demonstrate Britain's continued adherence to the agreement.[65]

With the Suez Canal remaining closed, government approval was given for group visits to continue and at the end of August 1974, a nine-ship RN task group, the largest to visit South Africa in several years, arrived in South African waters. After a weeklong operational visit to Cape Town and Simon's Town, the task group exercised with units of the SAN and Air Force, who were by now well practiced in working with large task groups.

On this occasion the South African frigate SAS *President Kruger* accompanied the task group on their northward passage to the United Kingdom before joining up with the next eastward-bound task group on their passage to the cape. This task group, the most powerful British force ever to call at the cape in peacetime, consisted of the helicopter-cruiser HMS *Blake*, flying the flag of Vice Admiral Henry Leach, RN, Flag Officer First Flotilla; six frigates; the nuclear-powered attack submarine HMS *Warspite*; and three Royal Fleet Auxiliaries. South African participants in the extensive four-day weapon training period, which commenced on sailing from cape Town and Simon's Town on 21 October 1974, included two frigates, a submarine, two coastal minesweepers, a fleet replenishment ship together with maritime aircraft from the South African Air Force.[66]

This was to be the last occasion on which South African ships exercised with RN units for almost 20 years, as extensive international press coverage of the operational visit and extensive combined weapons training period caused a political furore in Britain, which highlighted the political liability of maintaining naval links with South Africa. The Labour government, initially allowing these visits and weapons training periods to continue under the Simonstown Agreement, finally decided that the political disadvantages of doing so outweighed any military advantages. In reaching this decision on 31 October 1974, the British cabinet argued that:

> Although the defence facilities available to us under the Simonstown Agreement were useful in peacetime and could be of importance in war, their value was not such as to justify continuance of the Agreement in view of its political objections'.[67]

Because of this decision, and as part of the much wider British review of its overseas defence commitments, Britain announced its intention to enter into negotiations with South Africa, with a view to terminate the Simonstown Agreement.[68]

Following an exchange of letters between the two signatories, the Simonstown Agreement was finally terminated on 16 June 1975. In informing the House of Assembly in Cape Town of the termination Botha, said:

> Now that these Agreements have been terminated, the two navies will
> deal with each other on the same basis as either of them would deal
> with any other navy with which they have no special relationship'.[69]

The last remaining RN shore establishment on South African soil, *Afrikander,* was consequently shut down in February 1976, and the last Senior British Naval Officer South Africa, Commodore AFC Wemyss, RN, returned to the United Kingdom. This finally closed the chapter on 180 years of British naval presence in South Africa and effectively ended the traditionally close 'special relationship' between the two navies.[70]

Following the termination of the Simonstown Agreement and the subsequent imposition of a mandatory arms embargo by the UN in November 1977, which led Paris to cancel the sale of new corvettes and submarines on order for the SAN, South Africa was forced to abandon its role as a pro-West guardian of the cape sea route. From 1978 it concentrated entirely on the protection of South Africa's coastline and maritime interests, although the South African Government indicated that its facilities would be made available to the West, if requested, and if it was in the national interest.[71]

The subject of intense political controversy in Britain, the Commonwealth and indeed in the UN for much of its existence, the Simonstown Agreement remarkably continued for some 20 years, largely because of the continued belief by both signatories in the strategic importance of the naval base that sat astride one of the world's most vital sea routes linking the United Kingdom and Europe with the Far East. Whilst financial savings were a consideration when Britain negotiated the agreement, Britain's prime interest was in maintaining unfettered access to Simon's Town in peace and in war, at little or no cost, together with the concurrent development of the SAN's capacity to assume an increasing role for the defence of the cape sea route in close cooperation with the RN. Ultimately though, notwithstanding sound military logic and strategic argument, it was a political decision that resulted in the termination of the agreement; made all the easier by the completion of Britain's withdrawal from east of Suez, the reopening of the Suez Canal and increasing focus on the United Kingdom's NATO commitments.

For South Africa's part, the transfer of the naval base at Simon's Town to South African control, almost at any cost, was largely politically driven and a long-standing issue of national pride and sovereignty. The growth and development of the SAN, which Britain pushed so hard for, was initially of secondary importance to the South African Government. However, the rapid transformation of the SAN into a small but highly competent blue-water force, together with the ongoing strategic importance of Simon's Town and the cape sea route, particularly after the closure of the Suez Canal and the increased Soviet presence in the Indian Ocean, enabled South Africa to use the agreement as a means to maintain its only links with the anti-communist western alliance.

The Simonstown Agreement was finally terminated for political reasons in 1975, long after South Africa had left the Commonwealth and at a time when Britain was increasingly focusing on its NATO commitments and South Africa was becoming increasingly isolated internationally because of its apartheid policies. However, the agreement served the national interests of both nations and the broader western alliance well; and at the operational level, it remains an excellent practical example of Commonwealth naval cooperation and interoperability.

Notes

1. CH Bennett & AG Söderlund, *South Africa's Navy*, SA Navy, Simon's Town, 2008, p. 39; and Denis Judd, *Empire: The British Imperial Experience, from 1765 to the Present*, Harper Collins, London, 1996, p. 105.

2. Bennett et al, *South Africa's Navy*, p. 39.

3. Allan du Toit, *South Africa's Fighting Ships Past and Present*, Ashanti Publishing, Rivonia, 1992.

4. In 1857, the Cape of Good Hope Station became the Cape of Good Hope and West Coast of Africa Station, but reverted to its original name in 1903. In 1919 it was changed to the Africa Station, which it remained until the outbreak of war in 1939 when it became the South Atlantic Station. The title was finally changed to the South Atlantic and South America Station in 1956 after the commander in chief at the cape was also given responsibility for the major portion of the waters surrounding South America.

5. Although funded by the South African Government, and constitutionally part of the Union Defence Forces, the South African Division of the Royal Naval Volunteer Reserve, which made a valuable contribution during World War I, was placed at the disposal of the British Admiralty in time of war. The Royal Navy's Commander in Chief Cape of Good Hope Station, was responsible for the Division's peacetime organisation, training, administration and discipline.

6. The nascent South African Naval Service consisted of a survey ship to chart the South African coast and two minesweepers to train members of the South African Division of the Royal Naval Volunteer Reserve.

7. In 1935, Prime Minister, General James Barry Munnik Hertzog, made South African dependence on the RN, and the government's acceptance of this position very clear. Indeed, this position prevailed well into the 1940s.

8. The National Archives DO 121/232, Royal Navy Base at Simonstown; Historical Summary 1898-1951, Commonwealth Relations Office, Jan 1952.

9. The National Archives DO 121/232, Royal Navy Base at Simonstown.

10. During World War II, some 133 ships, totalling 743,544 gross registered tons, were sunk within 1000 miles of the South African coast by Axis U-boats, whilst only three German U-boats were lost during this offensive.

11. Bennett et al, *South Africa's Navy*, p. 23.

12. The National Archives PREM 11/1765, Royal Navy Base at Simonstown, Defence Committee, Memorandum by the Secretary of State for Commonwealth Relations, D(51)4, 18 Dec 1951; and R de Villiers, 'Afrikaner Nationalism', in M Wilson and L Thompson (eds), *The Oxford History of South Africa Vol. II. South Africa 1870-1966*, Oxford University Press, Oxford, 1971, p. 382.

13. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

14. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

15. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

16. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

17. The National Archives DO 121/232, Royal Navy Base at Simonstown.

18. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

19. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

20. The National Archives PREM 11/1765, Royal Navy Base at Simonstown.

21. The National Archives PREM 11/1765, Folio 276.

22. GR Berridge & JE Spence, 'South Africa and the Simonstown Agreements', in JW Young (ed), *The Foreign Policy of Churchill's Peacetime Administration 1951-1955*, Leicester University Press, Leicester, 1988, p. 188.

23. Berridge et al, 'South Africa and the Simonstown Agreements', p. 189.

24. Ronald Hyam & Peter Henshaw, *The Lion and Springbok: Britain and South Africa since the Boer War*, Cambridge University Press, Cambridge, pp. 243-244.

25. The National Archives ADM 116/6027, Letter 32/54 from the Secretary of State for Commonwealth Relations to the Prime Minister on Simon's Town and Naval Cooperation with the Union of South Africa, December 1954.

26. The National Archives FO 371/177101, The Simonstown Agreement.

27. The National Archives Cmd 9520, White Paper, Exchange of Letters on Defence Matters between the Government of the United Kingdom and the Union of South Africa, June 1955.

28. The National Archives FCO 45/654, South Africa and Naval Strategy, The Importance of South Africa.

29. J Spence, 'South Africa and the Modern World', in M Wilson and L Thompson (eds), *The Oxford History of South Africa Vol. II. South Africa 1870-1966*, Oxford University Press, Oxford, 1971, p. 479.

30. du Toit, *South Africa's Fighting Ships Past and Present*, p. 174.

31. du Toit, *South Africa's Fighting Ships Past and Present*, p. 174.

32. The National Archives FO 371/177101, The Simonstown Agreement.

33. du Toit, *South Africa's Fighting Ships Past and Present*, p. 174.

34. The National Archives ADM 1/29316, Speech delivered by the First Lord of the Admiralty on the occasion of the handing over of the Royal Naval Base at Simon's Town on 2 April 1957.

35. du Toit, *South Africa's Fighting Ships Past and Present*, p. 174.

36. du Toit, *South Africa's Fighting Ships Past and Present*, p. 175.

37. du Toit, *South Africa's Fighting Ships Past and Present*, p. 175.

38. du Toit, *South Africa's Fighting Ships Past and Present*, p. 175.

39. The National Archives FO 371/177101, The Simonstown Agreement.

40. du Toit, *South Africa's Fighting Ships Past and Present*, p. 175.

41. du Toit, *South Africa's Fighting Ships Past and Present*, p. 280.

42. The National Archives FCO 45/1613, The Importance of the Simon's Town Agreement.

43. The National Archives FCO 25/656, JS 10/10, Withdrawal of the British Commander in Chief from South Africa.

44. Announcement by the Under-Secretary of State for the Royal Navy, Mr Foley, 8 February 1967.

45. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 175-176.

46. The National Archives FCO 45/1613, The Importance of the Simon's Town Agreement.

47. The National Archives FCO 45/1613, The Importance of the Simon's Town Agreement.

48. The National Archives FCO 45/1613, The Importance of the Simon's Town Agreement.

49. The National Archives FCO 45/280, DN Plans 269/2 (Revised), 12 Sep 1968.

50. The National Archives FCO 45/679, Letter from Denis Healy to David Winnick, Esq, MP, 26 February 1970.

51. The National Archives FCO 45/1613, The Importance of the Simon's Town Agreement.

52. The National Archives FCO 45/280, DN Plans 269/2 (Revised), 12 September 1968.

53. The National Archives FCO 45/654, D35/8388/Br/2, Relationships with South Africa including protection of the Cape route.

54. du Toit, *South Africa's Fighting Ships Past and Present*, p. 229.

55. The National Archives FCO 45/679, Letter from Denis Healy to David Winnick, Esq, MP, 26 February 1970.

56. du Toit, *South Africa's Fighting Ships Past and Present*, p. 280.

57. Edward Heath, *The Course of My Life*, Hodder and Stoughton, London, 1998, p. 319.

58. The National Archives CAB 129/154, Report of the Public Expenditure Survey Committee, 1970.

59. du Toit, *South Africa's Fighting Ships Past and Present*, p. 280.

60. du Toit, *South Africa's Fighting Ships Past and Present*, p. 280.

61. du Toit, *South Africa's Fighting Ships Past and Present*, p. 176.

62. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 229-230; and The National Archives FCO 45/1613, The Importance of the Simon's Town Agreement.

63. du Toit, *South Africa's Fighting Ships Past and Present*, p. 230.

64. du Toit, *South Africa's Fighting Ships Past and Present*, p. 230.

65. The National Archives FCO 45/1613, Relations with South Africa – Simon's Town Agreements.

66. du Toit, *South Africa's Fighting Ships Past and Present*, p. 230.

67. The National Archives CAB 128/55/17, CC(74) 42nd, 31 Oct 1974.

69. The National Archives CAB 128/55/17, CC(74) 42nd, 31 Oct 1974.

69. The National Archives House of Assembly, Hansard No 19, 16 June 1975, par. 8489.

70. du Toit, *South Africa's Fighting Ships Past and Present*, p. 230.

71. du Toit, *South Africa's Fighting Ships Past and Present*, pp. 177-178.

9 From Participation to Protest: The Royal New Zealand Navy and Nuclear Testing 1957-95

Michael Wynd

As a part of New Zealand's political and naval history, our naval involvement in nuclear testing illustrates diverse forms of cooperation shaped by political considerations with Commonwealth navies. Our naval relationships with other Commonwealth navies are, as Norman Friedman has stated, symbiotic. This part of our naval heritage is unique to the Royal New Zealand Navy (RNZN).

This paper focuses on the history of participation and protest involving the New Zealand navy during nuclear testing conducted by Britain and France in the South Pacific. In the first instance, the British Operation GRAPPLE was a series of tests conducted in 1957 and 1958 supported by two Loch class frigates from the RNZN fleet. Fifteen years later, two frigates were sent as a direct protest against French atmospheric testing at Mururoa Atoll. Given the political atmosphere in 1973, this was a unique gesture by a sovereign nation and remains in naval history one of the few example where a warship was used to fulfil an election manifesto promise. As will be shown, there was naval cooperation, albeit reluctantly by the Australians. When France resumed underground testing at Mururoa in 1995, New Zealand once again sent a naval vessel to protest. This time there would be no cooperation with Commonwealth naval forces, it was a singular effort at the behest of the government in Wellington.

A History of New Zealand and Naval Cooperation

Diverse forms of cooperation with Commonwealth navies were not unusual for New Zealand. Our national history is intimately linked with that of the Royal Navy (RN) from 1769. The first example is Captain James Cook, RN, and his three voyages to New Zealand, which placed us firmly on the map and within the British Empire. The second example is Captain William Hobson, RN. He visited New Zealand in 1837 and was an obvious choice in 1840 to oversee the signing of the Treaty of Waitangi as the Lieutenant Governor of the new colony. He was also responsible for the establishment of the first naval shore facilities in Auckland at Devonport which remains to this day the location of an active naval base.

As New Zealand developed as a colony in the latter part of the 19th century, it saw the need for naval protection as its distance from Britain 'bred not isolation but a profound sense of vulnerability and indefensibility.'[1] By 1887, in conjunction with Australia, New Zealand made a contribution to the RN to ensure an increased presence in Australasia. New Zealand would continue contributing for over 30

years. A year later a new dry dock was opened at Devonport. One of the major factors driving this decision was that it could be used by ships of the RN operating in Australia and New Zealand.

Two years after becoming a Dominion in 1907, the Prime Minister Sir Joseph Ward offered to purchase two battleships for the RN while increasing New Zealand's financial contribution to naval defence of the Dominion to £100,000. Ward's intent was for this ship to be nominated as the Flagship of a proposed Pacific Fleet to include the Australian, East Indies, and China Fleets.

He stated his rationale for the offer by noting:

> How important it is for the protection of the Empire that the Navy should be at the absolute disposal of the Admiralty ... that the truest interest of the people of New Zealand will be best served by having a powerful Navy under the independent control of those responsible for directing it in time of peace or war ... so that the most effective results for the defence of all portions of the Empire may be assured.[2]

The gift battleship became a battlecruiser named HMS *New Zealand* worth £2,300,000.[3] The gift was warmly received and the citizens of the generous Dominion were allowed to see it twice during its service with the Grand Fleet. She served during World War I (WWI) at all the major engagements in the North Sea. Unfortunately, this battlecruiser would never form part of a fleet to protect New Zealand but Ward, as cynics suggested, gained a title from the King for his efforts on behalf of the RN. At least the New Zealand battlecruiser got into combat, unlike HMAS *Australia*, which in a spirit of non-cooperation collided with HMS *New Zealand* during the war. The historical record shows that up to 1913, New Zealand's form of naval cooperation was financial.

It was in 1913 that the New Zealand Government passed the *Naval Defence Act* authorising the New Zealand Naval Forces. Though only on paper, the Navy was established with the intended structure, duties and obligations set out in law. The concept had taken form and New Zealand's own navy awaited the reality of ships and men. Also in 1913, some 600 New Zealanders were transferred to the RAN.

WWI interrupted progress. The cruiser HMS *Philomel*, which the RN supplied to form the nucleus of a New Zealand naval force, arrived in July 1914 and departed soon after for war. The Commanding Officer Captain Thompson-Hall was appointed to the position of naval advisor but did not meet with government officials before he took *Philomel* to war. In 1916, despite conscription being passed in New Zealand and the focus on supporting the NZ Division on the Western Front and the Mounted Rifles, RN recruiters came to New Zealand for motor mechanics to serve with the motor boat flotillas. Over 250 New Zealanders joined the RN Reserve. In 1917, *Philomel* returned to New Zealand to spend the rest of her days as a depot ship in Auckland.

It was not until 1920 that the New Zealand Division of the RN was formed. New Zealand's naval defence consisted of one cruiser, then from 1925 two cruisers along with a minesweeper for training purposes. New Zealand committed to carry the cost of these cruisers and provide a base and labour. This remained in place during the interwar period. New Zealanders serving with the New Zealand Division of the RN progressively increased changing the nature of the ship's companies from purely RN. Arrival of two oil-fired warships meant a program of development of the naval base at Devonport was undertaken to support the cruisers. Cooperation was now a mix of financial aid and the supply of labour.

World War II (WWII) should be seen as the first significant period of naval cooperation between New Zealand naval forces and its Commonwealth brethren. In 1939, New Zealand could only offer two cruisers and they were quickly sent into action in the case of HMS *Achilles*, at the Battle of the River Plate. Although New Zealand had a small fleet, it did have one useful asset and that was workers. Over 10,000 New Zealanders passed through the training establishment HMNZS *Tamaki* during the war that went on to serve with the RNZN (assent being given in 1941) or the RN across all types of ships and in every operational theatre. In addition, a large number of New Zealanders served with the Fleet Air Arm.

In 1943, HMNZS *Leander* was decommissioned and HMNZS *Achilles* in refit so the RN loaned the Colony class cruiser HMS *Gambia*, to date the largest vessel to have served with the RNZN. New Zealand was also given the corvettes HMNZ Ships *Arbutus* and *Arabis*. By 1945, New Zealand's main naval cooperation was the cruisers *Achilles* and *Gambia*, attached to the British Pacific Fleet. This effort was supported by the Naval Radio Station located at Waiouru in the centre of the North Island.

During the war, the Combined Services Wireless Station at Waiouru was the RNZN's direct link with the Admiralty in London, naval bases in Canada, Bombay, East Africa, Australia and the United States. The Waiouru station also acted as part of the administrative signals network for the British Pacific Fleet. Part of this critical support was sending Morse code signals for the Fleet Train to conduct replenishments at sea, due to the overloading of American fleet circuits when the Allied fleets were operating off Japan. This station also handled the radio traffic for the British Pacific Fleet supporting the Admiralty in London in communicating with its ships.

In the post-war period, the RNZN scaled down significantly in ships and personnel. In the spirit of post-war cooperation we were supplied with the improved *Dido* class cruisers HMS *Bellona* and her sister ship HMS *Black Prince*. In the mid-1950s, HMS *Royalist* would also join the New Zealand fleet. New Zealand officers were also sent the United Kingdom for training and professional development. As a throwback to our financial cooperation, from 1949 the RNZN shared the cost of stationing the RN's 4th Submarine Squadron at Sydney for the purposes of 'live anti-submarine

training' with the RAN.[4] During the same year, New Zealand also offered three of its Loch class frigates for the defence of Hong Kong during the closing stages of the Chinese Civil War and the formation of Communist China.[5]

By 1950, the RNZN was so short of experienced officers and ratings that the RN kindly supplied a cadre. This cadre would comprise 25 per cent of the strength of the RNZN in that year. The RN also provided all the officers to serve as members of the New Zealand Naval Board until 1957 when the first New Zealander joined.[6] In an example of the post-war links to the RAN, the RNZN cooperated closely with the RAN in the protection of sea lanes within the designated Australia, New Zealand and Malaya area.[7]

Then in 1948, New Zealand was given a deal to purchase six Loch class frigates at the bargain price of £1,500,000. This enabled the re-establishment of a New Zealand squadron.[8] The RN also lent 250 ratings on a short-service engagement in order for the 6 frigates to be sailed to New Zealand.[9] Having these vessels in the fleet enabled New Zealand to contribute to the United Nations naval forces during the Korean War. All six frigates would serve with the fleet between 1950 and 1954 as the RNZN maintained two frigates on operations off Korea. As a small localised example of cooperation from this period, in 1951 New Zealand sailors and Royal Marines conducted raids on the North Korean coast.

In 1954, the RNZN sent the frigate HMNZS *Pukaki* to join the Third Frigate Squadron of the Far East Station under RN Far East Fleet command. It took part in exercises with RAN, Indian and Dutch warships.[10] During the Malayan Emergency, New Zealand frigates and cruisers served alongside Australian and British vessels conducting patrols and shore bombardments.[11]

By the time of our participation in nuclear testing, New Zealand had a long and close working relationship with Commonwealth navies in financial and practical terms. This spirit of cooperation was now to be put upon by Britain to supply assistance to the Royal Navy in one of its largest post-war deployments.

Operation GRAPPLE

In the post-war period, development of nuclear weapons became a cornerstone of the United Kingdom's defence and foreign policy. America accelerated its nuclear program and had passed the *Atomic Energy Act 1946* prohibiting the exchange of nuclear weapons and testing data between America and Britain, in wilful ignorance of the United Kingdom's contribution to the Manhattan Project.[12]

After making the decision to enter the nuclear arms race Britain needed a place to test their weapons. After a review, a secret request for a suitable test site was made in 1950 of the Australian Prime Minister Robert Menzies.[13] A site at Monte Bello Island, off the western coast was offered and Operation HURRICANE, the first British nuclear test, was carried out on 3 October 1952.[14] Following on from the

first test, Britain carried out further testing in Australia in 1953, 1956, and 1957. The program required participation of 40,000 British, Australian, and New Zealand personnel and civilians.[15]

In 1953, the British Defence Research Policy Committee issued a report that described the object of the tests was to discover the detailed defects of various types of nuclear explosion on equipment, stores, and men with and without various types of protection.[16] In June 1954, the Bristish Government authorised the development of thermonuclear weapons.[17] The White Paper released in February 1955 stated that 'we must contribute to the deterrent and to our own defence.'[18]

It was understandable that testing a thermonuclear weapon on a land mass was not the preferred option given the risks of fallout on civilian populations. Under the agreement allowing the atomic tests, Australia could refuse to allow testing of thermonuclear weapons at the existing test sites.[19] Australia's refusal meant that the Air Ministry Trials Planning Section had to consider alternative test sites. The United Kingdom wished to avoid the disastrous American *Bravo* test at Bikini Atoll in March 1954 where service personnel and civilians had been irradiated by the 65-ton device whose yield was double what had been predicted but typical of a new weapon.[20] The operation for testing thermonuclear devices in the South Pacific was given the code name Operation GRAPPLE. The purpose of the testing would be to test the loading and deployment of thermonuclear weapons from Valiant bombers and the weapon's performance.[21]

The Air Ministry Trials Planning Section's test site criteria were: favourable wind and weather for air and sea operations; suitable harbour for landing supplies; away from inhabited areas but accessible to source of supplies; and they had to have an airstrip long enough to take the Valiant bomber.[22]

In 1955, the British Prime Minister Sir Anthony Eden approached New Zealand's Prime Minister Sidney Holland with a personal request to use the Kermadec Islands as a testing site. The planning section had concluded that this was 'the most promising site.'[23] His request was framed around the principle of the Commonwealth defence effort. He hoped 'that, in the interest of our common defence effort and the importance of the deterrent for Commonwealth Strategy, you will find it possible to agree.'[24]

The first test at this new site was proposed for 1957. Eden was at pains to state this was a 'safe site'.[25] The device would be mounted on a tower or a ship anchored near the shore. The response was framed by the New Zealand Government's political and defence policy then in place.

New Zealand Cooperation

In the 1950s, New Zealand's foreign and defence policies were orientated to the Commonwealth. In terms of the commitment of armed forces, New Zealand had shifted its focus from the Middle East to Southeast Asia.[26] In Wellington's view, the development and testing of atomic and thermonuclear weapons by the United Kingdom would enhance New Zealand's and the Commonwealth's security.[27] New Zealand did not object to the Pacific Ocean being used for nuclear weapons tests as long as these weapons could be used to 'prevent or to ward off "an armed attack in the Pacific Area" on one of its treaty partners or possessions'.[28]

While not overtly enthusiastic, New Zealand hoped that these weapons would create balance of power in favour of Anglo-Saxon democracies and their allies and prove a deterrent to the Soviet Bloc. The West, in New Zealand's opinion, had to remain strong in the face of communism.[29] Upon receipt of Eden's request, Holland was beset by personal concerns about the testing of these new weapons.[30] The source of this concern was due in part to the impression that Churchill had given to Holland early in 1955 about the destructive power of a thermonuclear device. He was also aware of unfavourable public responses to the proposed testing in Britain.[31]

He sought advice from Defence and the former head of the Department of Industrial and Scientific Research. The answer he received was that the 'difficulties' and public opposition to use of the Kermadecs 'outweighed other factors, such as New Zealand's desire to assist with Commonwealth defence preparations.'[32] New Zealand was willing to play its role in defending the Western Bloc, but was not prepared to use its backyard to do so. He duly informed the UK High Commissioner in August 1955 that the Kermadecs were not available. Eden was disappointed that New Zealand would not help Britain to carry out testing. He then advised Holland that the United Kingdom was:

> now considering the possibility of using some other less suitable site
> in the central Pacific. The practical difficulties are however likely to
> be serious and if we fail to find an acceptable alternative I may be
> compelled to ask you whether you would reconsider the matter.[33]

Despite New Zealand's rejection of the use of the Kermadecs for testing, they were still willing to provide assistance in whatever way they could. It was readily agreed to make available the docking facilities at HMNZS *Philomel* in Devonport to any Royal Navy vessels that needed to use them.[34]

The First Example of Cooperation

At the same time as Eden had asked to use the Kermadecs he also requested that the RNZN conduct a hydrographic and geological survey of Malden and Christmas islands.[35] HMNZS *Lachlan,* the first hydrographic vessel to serve with the RNZN, surveyed the Northern and Southern Line islands between January and February

1956.[36] Royal Navy and Royal Engineer officers joined the ship at Suva on 21 January 1956 to assist in the surveying task as part of the GRAPPLE planning team.[37] The RNZN effort supported the air reconnaissance carried out by Royal Air Force Shackleton aircraft.[38]

The survey had to be carried out in some secrecy and a cover story was developed when the ship arrived at inhabited islands.[39] During the voyage, the ship stopped over at Papeete and the Commanding Officer of *Lachlan* noted that 'it was the ideal place for the entertainment of seafarers … with its good music and Tahitian girls.'[40] On completion of the survey, the British officers were disembarked at Lautoka and returned to the United Kingdom by air.[41] Based on the survey results the Trials Planning Section found an alternative to the Kermadecs. The suitable site for a base of operations was Christmas Island in the Northern Line Islands (now Kiribati). Malden Island was an uninhabited island 700km southeast of Christmas Island, which would be used for the tests.

The first party landed at Christmas Island in June 1956, and by November, equipment and land-based units were in place constructing the base, which became one of the United Kingdom's biggest military facilities outside of Britain.[42] GRAPPLE became one of the largest post-WWII joint service operations.[43] Also in June 1956, the Mosaic G2 device was tested off Alpha Island. This 60 kiloton device was the largest yet detonated and was to test triggers for the thermonuclear devices to be tested in a forthcoming program.[44] Despite his rejection of using New Zealand territory, Holland went on record in 1956 stating that:

> In the absence of any agreement among major powers on the question
> of control and supervisions of reductions of conventional armaments,
> the development of this branch of the nuclear sciences must continue.
> Periodic tests are essential to this work.[45]

New Zealand's Naval Contribution

On 26 July 1956, the United Kingdom requested that New Zealand supply two of its Loch class frigates to the GRAPPLE Task Force.[46] The ships would have to be at Christmas Island from 21 March 1957 to early July.[47] A request had been made of Australia but there was not a ship suitable for weather reporting in its naval fleet.[48] The New Zealand Government was assured that the participation of the frigates would not incur any extra costs than normal for an overseas deployment.[49] The reason given was that the RN had very few ships readily available that were fitted with type 277Q radar suitable to track weather balloons and:

> would find it extremely difficult to provide two [ships] without
> interfering with such commitments as patrols in the Persian Gulf for
> which the ships have been especially tropicalized and complemented.

It was understood that the RNZN had three frigates with 277P radar that could be easily converted. As for using British cruisers fitted with this radar type from the Far East Fleet, it was explained that 'it would be very wasteful in manpower, as well as undesirable from the point of view of demands on the Far East Station, to use cruisers as weather ships.'[50]

To provide cover for the deployment of the two RNZN frigates on GRAPPLE the RN offered the frigates HM Ships *St Brides Bay* and *Cardigan Bay* as replacement ships to fulfil the operational program of the RNZN frigates.[51] In October 1956, the New Zealand Naval Board met and began to plan for the deployment, selecting frigates HMNZ Ships *Pukaki* and *Rotoiti* based on the offer of the RN and the requirements set by the Air Trials Planning Section.[52] Between November 1956 and January 1957, the dockyard at Devonport upgraded the radar to type 277Q along with other work required to bring the frigates to operational readiness for GRAPPLE.

As news began to filter into the public arena of a proposed testing program in the Pacific, there was some public disquiet. Suggestions were made that New Zealand withdraw its offers of support and ships from the task force. In response, the then Chief of Naval Staff, Rear Admiral John McBeath, RN, stated that New Zealand was not threatened by these tests and that the government did not want to be seen 'starting a job and not having the guts to finish it.'[53] Overall, the New Zealand public in 1957 supported naval participation. However, just in case, the government ran a public relations exercise to assuage fears. By 1957, the British Government was publically stating that 'tests are indispensable part of their [nuclear devices] manufacture.'[54]

There was concern in Wellington about security. Around this time there had been comments made by naval officers in public regarding the Suez Crisis, visiting British warships, and the conduct of RNZN operations that cut across the government public statements. From the first involvement of the navy, the resultant media coverage of the participation in Operation GRAPPLE was to be tightly controlled. Naval officers were on warning not to offer comments to the press.[55] There was some disquiet that the New Zealand frigates would be used to arrest Japanese protest vessels. In early 1957, there was a lot of debate between the defence and external affairs departments in Wellington over the potential for a protest fleet from Japan. Finally, external affairs proposed that the operations of the frigates be restricted.[56]

McBeath felt that such a course of action would cause the RN 'to lose all faith' in the RNZN and there would be no restrictions imposed on the operational deployment. This view was coloured by the action of withdrawing the upgraded and fully worked-up cruiser HMNZS *Royalist* from the British Mediterranean Fleet during the Suez crisis.[57] On 11 February 1957 the Cabinet approved New Zealand's participation in GRAPPLE and on 18 February the Naval Board ordered the commanding officers of *Pukaki* and *Rotoiti* to make ready for sea.[58] The Cabinet approval included:

> The giving of ancillary assistance to the United Kingdom in Connection with the forthcoming nuclear tests in the Pacific including –
>
> (i) the fitting of two RNZN frigates with special radar equipment and their serving as weather ships for the operation from 21 March until early July.[59]

Holland issued a carefully drafted (with British assistance) press release on 5 March 1957 announcing the participation of the frigates in the forthcoming testing. The two frigates were to be stationed in the 'Central Pacific as weather ships.'[60] This 'ancillary assistance ... provided to the United Kingdom will be directed primarily to improving the effectiveness of these precautionary measures.'[61] The frigates would fit into a meteorological network consisting of weather ships and land based stations supported by aircraft. Just prior to the first GRAPPLE test Holland commented:

> If Britain were to call a halt now it would leave her uncertain in her knowledge as to whether she did in fact possess adequate means of retaliation should nuclear weapons be used against her or should she be threatened with attack by this means. The United Kingdom understandably wishes to have that knowledge.[62]

The RNZN was unprepared in terms of personal protective gear and equipment. In order for the ships to participate, the RN would have to supply whatever was required.[63] The ships would also be equipped with pre-wetting systems of hoses and spray heads to wash down the superstructure of the ship to prevent fallout from settling. The atomic, biological and chemical warfare defence states of operation were implemented aboard the ships for when they were operating within the testing zone. In case of a serious radiation hazard the ship would be secured for the protection of the ship's company. Joining the New Zealand frigates for training purposes were 40 ratings of the Fiji Royal Naval Volunteer Reserve. When they arrived at Christmas Island, they were transferred to HMS *Warrior* for three months training.[64]

Testing Operations

The primary task of the frigates was to conduct patrols around the test site and launch hydrogen-filled weather balloons. Radar reflectors fitted to the balloons enabled them to be tracked by the 277Q radar system so that wind speed and direction could be measured. Additional measurements were taken of the water temperature, humidity, and rain. All weather data collected by the ships was provided to the main meteorological centre located on Christmas Island. A specially trained RN team was assigned to each frigate to assist with the data collection.[65] Balloons were released at regular intervals and additional balloons were released just prior and after a detonation. *Pukaki* tracked one balloon to a height of 30,602m. Secondary tasks included air-sea rescue, police patrol, anti-submarine watch, monitoring the thermal flash, and sampling the water

for radiation contamination.[66] Precautions were taken in case there was a surface detonation. Ships were stationed upwind of ground zero and away from areas that would likely be contaminated if a surface burst occurred.[67]

The ships departed Auckland on 14 March 1957 to join the task group. On route, many drills were undertaken of damage control and gas-tight states to prepare for operating in the test zone.[69] Pre-wetting was also practiced.[70] Two officers from the RN served aboard *Pukaki* for the first five tests in 1957 and 1958, but for the last series of four tests all officers aboard were New Zealanders.[71] Both ships carried the equivalent of a full wartime complement, approximately 150 officers and ratings.[72] *Pukaki* arrived at the port of London, a natural harbour inside the northwest arm of the Christmas Island's lagoon on 21 March 1957 followed by *Rotoiti* on 29 March. The RN embarked a meteorological team aboard both vessels to assist in the weather recording for the operation. Operational command was with the Commodore Grapple Squadron based at Christmas Island. The RNZN headquarters in Wellington dealt with administrative matters in the usual way.[73]

The light fleet carrier HMS *Warrior* was the operation control ship for GRAPPLE.[74] RN helicopters were used to transfer supplies, personnel, and equipment between the control ship and the frigates when required.[75] In May, personnel from *Warrior* carried out repairs on *Pukaki*'s radar.[76] *Warrior* also carried replenishment for the frigates in May and June 1957. This included fuel, provisions, hydrogen and film. The RN issued the necessary equipment, which included contamination meters, valve water sampling heads, water contamination calculator, survey meters, quartz fibre dosimeters, and 300 film badges.[77] These film badges were collected after each test and sent to HMS *Narvik*, the Scientific Technical, Control and Monitor ship, for processing.[78] Anti-flash hoods and gloves, surgical gauze masks, Atomic Weapons Research Establishment coverall suits, tinted goggles, and light type respirators were issued to the ship's company.[79] Ratings and officers from *Pukaki* and *Rotoiti* attended a one-day training program given by the GRAPPLE Squadron atomic defence officer aboard *Warrior.* Commander Hale of *Pukaki* thought the course 'good value and assisted considerably in providing much needed information for the [atomic defence] organisation.'[80]

The New Zealand sailors received medical support through GRAPPLE Squadron's primary medical officer. There was a high demand during the first deployment for antibiotics and dentistry.[81] Additionally, 19 New Zealand service personnel were posted aboard *Warrior* during the first GRAPPLE tests. There is no definite information as to what they did or how long they served aboard the carrier in 1957.[82] A New Zealand sub lieutenant served on the frigate HMS *Scarborough* for the four tests between August and September 1958, and three RNZN personnel served at HMS *Resolution,* the shore establishment located on the north-west coast of Christmas Island.[83]

Pukaki began its first weather patrol for GRAPPLE on 31 March 1957, and was joined by *Rotoiti* on 5 April 1957. The collection of weather data was successful and the newly installed radar equipment worked satisfactorily. Both ships conducted static atomic defence exercises in April and deployed the pre-wetting equipment. This was highly unpleasant due to the heat and humidity of the local conditions amplified by the enclosed spaces of the sealed vessel. The Commanding Officer of *Rotoiti* did note that the atomic defence training had 'been at the expense of day to day maintenance, weapon training'.[84] For serving aboard a ship that was never designed for deployment in nuclear environments, the officers and men of the RNZN should be commended. By May 1957, the RNZN had been given the most recent protocols for atomic defence organisation and procedures aboard ship by the Royal Navy, something that was not available to the commanding officers prior to deployment to the operation.[85]

After a rehearsal in late April, *Pukaki* and *Rotoiti* left Christmas Island (in early May) on patrol in preparation for the first GRAPPLE test. On 15 May 1957, the test codenamed SHORT GRANITE was carried out. Both ships took up their assigned positions off Malden Island. By 0950, all the ship's company were in their protective clothing with dark goggles fitted. *Pukaki* was stationed 50nm from the detonation point. Apart from men required to remain at their stations below deck the ship's company was assembled on the upper deck facing aft away from the test site. The device detonated at 1038 local time approximately 2400m above Malden Island after release at 14,000m from a Valiant bomber.

Commander Hale recorded the initial scene in *Pukaki*'s Report of Proceedings:

> The fireball just starting to grow in size was easily visible well above the horizon. During plus 2 and plus 3 minutes the blast wave was distinctly noticeable by a double wave of pressure on the ear drums followed closely by a double rumble – the explosion. For those first of two or three minutes the fire ball grew in size shaped like a round fiery [sic] red streaked with grey to a larger smouldering ball of cloud visible for 7 to 8 minutes.

Rotoiti was stationed 150nm from surface zero. The commanding officer implemented the full range of nuclear, biological and chemical defence precautions. The rumble of the detonation was heard 13 minutes after detonation and only later was the cloud seen. *Rotoiti* and *Pukaki* met up with *Warrior* in the afternoon to offload data from the weather balloons launched after the test and take on new supplies.[86] The ship passed within 6nm of ground zero (or surface zero as it was called for these tests). In addition, three New Zealand observers from the navy, army, and health department observed the test aboard the RN ship HMS *Alert*. The observer from the health department reported to Holland that the 'report reinforces the assurances the Government has received from Britain that the tests are being conducted with the utmost care and regard for the safety of human life.'[87]

The cooperation procedure for the second and third tests held on 31 May and 19 June followed the same pattern as the May 15 test. Both ships offloaded the specialist equipment and left Christmas Island 25 June 1957 arriving at Devonport Naval Base on 16 July.[88] The commodore of the GRAPPLE Squadron reported to Wellington on the atomic defence training and made a number of suggestions based on the experiences of the first tests for the future deployments.[89] The commander of the GRAPPLE Task Force, Air Vice Marshall Wilfred Oulton, also visited Wellington in June 1957 to thank the government for their support. Due to the poor results of the first three GRAPPLE tests, a further test was planned for late 1957. Britain was aware that an international agreement to halt all atmospheric testing was being discussed and could be coming into effect before the schedule for GRAPPLE could be completed.

The location for the first test of a thermonuclear device was to be moved from Malden Island to Christmas Island. The rationale was that the first three tests had shown that an airburst test could safely be conducted near population areas.[90] In July 1957, Holland responded to a note from Prime Minister Harold Macmillian stating that 'New Zealand should give whatever assistance is possible on lines similar to that accorded for earlier tests.'[91] In August 1957, arrangements were confirmed with the New Zealand Naval Board that *Pukaki* and *Rotoiti* would be used again as weather ships. Fortunately for the RN, the operations plan for the two ships had kept them in New Zealand waters and both could readily be deployed.[92] Macmillian wrote to Holland on 11 September advising that it was planned to keep the GRAPPLE Task Force at Christmas Island until mid 1958 because of the great expense and effort that the United Kingdom had engaged in and he sought an agreement in principle.[93]

Keith Holyoake, who had taken over as Prime Minister, wrote to Macmillan on 4 October 1957 stating that New Zealand would 'give whatever assistance we can to enable you to carry out these tests successfully and safely.'[94] He also confirmed that New Zealand would assist with testing in 1958, up to May, if necessary. This deployment was publicly announced on 10 October 1957.[95] By 22 October, both ships arrived at Christmas Island. At this time, a new atomic defence handbook was issued for the Loch class frigates with procedures for sealing off the ship in a contaminated environment, levels of containment, and decontamination.[96] Both were on station when the ROUND C test was carried out on 8 November. Both frigates exercised with the GRAPPLE Squadron, returned to New Zealand in company, and arrived back at Devonport Naval Base at the end of November. Despite Holyoake's commitment in October, the United Kingdom put out feelers about the use of the frigates in 1958 in November. New Zealand, it was said, had:

> unselfishly performed this unrewarding task in previous and current tests … the United Kingdom was certainly not seeking in any way to press New Zealand to continue if she wishes to be relieved.[97]

The RN was aware that 'we would ask the RAN to take it on but we have every reason to suppose that in present circumstances they would find it difficult to help us.' Although two frigates were required an option was given that the RNZN could supply one frigate if that was all that could be provided. In a letter the High Commissioner wrote:

> My Government feel [sic] some hesitation about asking you to continue this assistance but they would naturally welcome it, as otherwise the burden would have to fall on the Royal Navy, whose resources are already much strained.[98]

Keith Holyoake reaffirmed the commitment of the frigates to the task force.[99] However, the RN was told that only *Pukaki* would be available as *Rotoiti* was undergoing a major refit in early 1958 and then would be replacing the cruiser HMNZS *Royalist* as New Zealand's contribution to the Far East Strategic Reserve.[100] Unless *Rotoiti* was released by the Far East Fleet from her commitment in May, she would not play any role in the 1958 test series.[101] As it turned out, HMS *Ulysses* took *Rotoiti*'s place.[102] The High Commissioner wrote back saying that:

> The United Kingdom Government are most grateful for the willingness of the New Zealand authorities to help them and accept your offer with appreciation. The Royal Navy will provide the second frigate for the first test.[103]

The follow-up to Holyoake's commitment by the United Kingdom was in reaction to the Labour Party's victory in the 1957 election held in November. There were those within the Labour Party that supported a halt to New Zealand's participation in the GRAPPLE programme and went as far as to state the Labour government 'would oppose all further tests of nuclear weapons.'[104] Suddenly that firm commitment looked very shaky. As a public servant in external affairs recorded in a December 1957 memo:

> Are we not duty bound (in view of Labour's expressed views on the question of tests) to bring this commitment (to assist in the 1958 programme) to the notice of the Labour leaders in the near future? (i.e. before RNZN sources leaked to the media).[105]

The High Commissioner for the UK sent a secret memorandum to new Prime Minister Walter Nash in December 1957 in quest of Labour's formal position on nuclear testing. Nash hesitated to reply and in early January 1958, the High Commissioner wrote to Nash seeking 'your confirmation that they [GRAPPLE planners] could continue to plan on the basis of the promises of assistance already made to them by your predecessor.'[106]

Many Labour supporters wanted the frigates withdrawn for the 1958 program. However, on 13 January Nash agreed to fulfil the undertakings that the previous government had made in November 1957 regarding assistance to the 1958 testing program.[107] The 1958 deployment was far more politically sensitive than the tests in 1957. New Zealand's policy was to 'help and not hinder' the RN, and a memo from the Secretary for External Affairs to the Navy Secretary in January stressed that the secrecy of the tests were to be preserved. The United Kingdom had delayed the announcement so that it would not succumb to pressure to end the testing. [108] The risk of suspension or cancellation of the tests was characterised as 'a victory for Soviet propaganda which is to neutralize and discredit the deterrent.'[109] Macmillan in a personal note to Nash noted that the public opinion of holding another series of tests 'may be highly unfavourable' and that 'this criticism is bound to grow.'[110] By mid-March the United Kingdom was asking New Zealand to provide a 'cover story' for the deployment of *Pukaki* while in turn the Ministry of External Affairs was pushing for a formal announcement of the resumption of testing as it was 'a delicate political question for the Government' who was under some pressure publicly to explain the movements of a RNZN frigate.[111]

Pukaki arrived at Christmas Island on 12 April 1958 and began a series of weather patrols. As per the 1957 tests, a RN party was taken onboard. On the morning of 28 April 1958, she took up her position 80nm east of surface zero. This thermonuclear weapon produced a yield of 3 megatons, the highest of the GRAPPLE series. The next day *Pukaki* passed through surface zero. *Pukaki* left Christmas Island on 2 May and arrived at Devonport Naval Base on 18 May.[112] Harold Macmillan spoke in the House of Commons the day after the 28 April test, in response to criticism that the United Kingdom was testing, and stated that:

> we ought to have the bomb and not abandon it, but use it as an instrument of negotiation so it is just as well we should have had the last test.[113]

However, there would be more tests required.

On 14 July 1958, the UK High Commissioner in Wellington wrote to Nash:

> My government has expressed the hope that the New Zealand Government will continue to extend the cooperation hitherto given during this series [of nuclear tests]. The details of this cooperation are being taken up through Service and official channels.[114]

Nash was advised that the tests needed to be completed before a halt to nuclear testing was agreed to by the nuclear powers.[115] Nash confirmed the participation of a RNZN frigate for the final series of GRAPPLE tests.[116] *Pukaki* departed Devonport Naval Base for Christmas Island on 23 July 1958. This time the RNZN's Senior Chaplain Reverend Henry Taylor was aboard as he had been appointed as the GRAPPLE Squadron's Chaplain for the final series. Also joining the ship for this last series was an Admiralty

scientist.[117] *Pukaki* followed the same pattern of operations as had been followed in 1957 and earlier in 1958.[118] The first weather patrols were undertaken between 8-13 August. On 16 August, she joined the *Whitby* class frigate HMS *Scarborough* on patrol. Due to overcrowding aboard the frigate, two RNZN officers were detached and sent to *Scarborough*. On 22 August, *Pukaki* was stationed 28nm east of surface zero. *Pukaki* was also stationed as a weather ship for the 2 and 11 September tests and the final and last British atmospheric test held on 23 September.[119]

Following the test, *Pukaki* launched the last of the weather balloons and returned to Christmas Island on the evening of 23 September 1958. The next day the equipment was offloaded and she departed from Christmas Island on 25 September and arrived at Devonport Naval Base on 9 October.[120] This concluded the participation of the RNZN in Operation GRAPPLE. In November, the New Zealand Government received a note 'expressing the warm appreciation of the United Kingdom Government … for their assistance in this matter [nuclear testing] over the last year.'[121]

This ended New Zealand's participation and cooperation for nuclear testing. However, in the years between participation and protest there were many opportunities for further Commonwealth cooperation. For example during the Indonesian Confrontation, the new frigates HMNZ Ships *Otago* and *Taranaki,* and the cruiser *Royalist* served alongside RN and RAN vessels. In 1965, Britain lent to New Zealand two Ton class minesweepers HMNZ Ships *Hickleton* and *Stanton*, that served with New Zealand crews as part of the RN 11th Minesweeping Flotilla until late 1966.[122]

Protest, Naval Cooperation, and the French Atmospheric Testing in 1973

Public opposition to nuclear testing in New Zealand began to develop at the end of the GRAPPLE program. After a brief moratorium, the United States resumed atmospheric tests at Christmas Island in 1962, but then reverted to underground testing. China then joined the nuclear club with its first test. The nuclear arms race led France to become the third country to use the Pacific as a testing site. France started its nuclear program in 1951 and first conducted a test at the Reggane site in Algeria in February 1960.[123] Wellington at the time considered it an attempt by France:

> to prove she is a power who should have as much 'say' as the United States and the United Kingdom in the conduct of the West's affairs in a nuclear age.[124]

The RNZN would play a significant role in the protest against French nuclear testing in the Pacific in 1973. To send an armed frigate as an act of protest is unique in New Zealand's naval and political history. This one act showed how much the government had changed its views from participation in the 1950s with GRAPPLE to outright opposition, sending a warship to operate off another nation's colony not as an act of war or provocation, but as a political protest. There are those in New Zealand who

have argued that 'New Zealand could support nuclear testing by Western Powers generally and oppose French nuclear testing in the Pacific without inconsistency.'[125]

After granting independence to Algeria, France looked to the South Pacific for a new test range much in the same way that Britain had a decade earlier. In 1963, the New Zealand Government announced that the French Government had decided to move their atmospheric testing program to Mururoa and Fangataufa Atolls, part of the Tuamotu Archipelago, located around 1200km southwest of Tahiti.[126] At this point, the New Zealand Government first formally expressed its concern at the proposed testing program in 1963 with representations to the French Government, the process continuing through diplomatic channels and inter-governmental meetings up to the end of 1973. The French response to the 1963 notes was:

> It is not acceptable [to France] that a [systematic] campaign of this kind be carried on against French [nuclear] tests in a country with which France has particularly friendly relations.[127]

The main objection to the French testing program was the hazard from fallout to the people of New Zealand, the Cook Islands, Niue and Tokelau Islands.[128] New Zealand had monitored the testing and had recorded fallout over all these areas despite the French attempts to mitigate the effects of the tests and the supposed 'safer' location.[129] A report from the Central Intelligence Agency (CIA) in 1964 noted that 'Australia, New Zealand and Chile have already officially objected to the establishment of the test site.'[130] A 1960s CIA report, released in 2006, noted that the French testing had 'a good safety record' but had over time remained 'a rallying point for anti-nuclear forces in the region.'[131] France conducted the first atmospheric test on 3 July 1966.[132] France declared a prohibited zone around Mururoa Atoll and Hao Island in 1965 but it also declared dangerous zones during the tests themselves. These were not fixed and could be of any size and shape dependent on the test and French concerns. By 1972, the French navy and air force operating from the test site were actively interfering with foreign shipping.[133] A secret CIA report in early 1973 noted that a new season of atmospheric testing was due to be conducted by France and that:

> The impending tests have evoked vigorous protests from a number of countries in the South Pacific, and Paris had admitted that the outcry this year has been especially strong. The French Government however, has made it clear that it will proceed with the tests, that it will not be bound by any decisions of the organisations, and that it considers the protests to be hypocritical.[134]

During the testing program from 1968 to 1972, New Zealand sent formal protests to the French Government, although there were those in New Zealand that agreed with the French view that New Zealand was being hypocritical.[135] By 1972, New Zealand in coordination with Australia had made many representations to various international bodies such as the UN Committee on Disarmament, Committee on

Peaceful Uses of the Seabed, Australia, the United States and ASEAN.[136] Despite these representations, Wellington was not always convinced that Australia fully supported protest action. Australia was often ambivalent to New Zealand's anti-nuclear stance and would rather side with the United States over moral issues in foreign policy.[137] In late 1972, failure to force a cessation of France's atmospheric testing due to a lack of support amongst UN members led New Zealand diplomats in New York to warn that neutralising resolutions against atmospheric testing:

> Increase[s] frustration in the Pacific region and increase[s] pressures on New Zealand and other governments [presumably the island states] for less palatable forms of action which have so far been resisted in favour of an approach through UN Channels…rather than to provoke a direct confrontation.[138]

During the 1972 elections, the Labour Party announced that if elected it would send a frigate to Mururoa with a cabinet minister aboard in order to further the protest against French atmospheric testing. However, Labour was acutely aware it had to proceed along a very narrow path. On the one hand, it was appeasing its supporters by being seen to be doing something about the testing, while on the other acknowledging that the balance of trade was in favour of New Zealand and that France could limit New Zealand's access for exports into Europe.[139] In November 1972, on orders from the Prime Minister's office, naval staff in Wellington began work on the operational plan for a frigate to sail to Mururoa to protest the next series of testing starting in July 1973. France, which considered their results from the 1972 series of tests to be less than satisfactory, planned a further two tests in 1973. It was reported at the time the French were testing detonators for their thermonuclear devices that had been developed in 1968.[140]

There was already talk of sending a warship as protest in January 1973.

> Gough Whitlam publically stated on 24 January that he had 'not ruled out cooperation with New Zealand in sending a warship into the French nuclear test zone if necessary. But Australia and New Zealand were not assuming that the French would resume the tests.'[141]

Prime Minister Norman Kirk's letter to the French Government in March of 1973 claimed that continued French atmospheric testing was a 'violation of New Zealand's rights under international law' and sought an assurance as to when the testing program would end.[142] France demurred and strongly contested the assertion. The New Zealand Government then advised that it would seek legal remedy via the International Court of Justice. This was part of the commitment made by Labour and consistent with their 1972 policy of 'opposing all tests of nuclear weapons.'[143] France refused to recognise the status and ability of the court to rule on the Australian and New Zealand injunction. In the French view, the court was outside its authority when dealing with matters of France's national defence.[144]

By May 1973, New Zealand sought other means to run parallel to the legal avenue of protest. Kirk's government soon decided upon taking unilateral action. There were two parts to the action:

> 1. The government would offer public support to the protest fleet being organised to sail to Mururoa. Note that this stopped short of logistical assistance, because the RNZN fleet was without such a vessel as the tanker HMNZS *Endeavour* had been decommissioned in 1971. If any ship were to come, it would need to be from the RN or RAN.

> 2. Deploy a naval vessel with a cabinet minister aboard 'to support the private protest boats and dramatise the depth of official concern.[145]

The *Dominion* reported on 5 May 1973 that the RNZN had decided which of its frigates were to be deployed to Mururoa.[146] *Otago* would be going to demonstrate the extent of the Labour government's opposition to the nuclear tests.[147] While the first part of the unilateral action was simply political grandstanding for a domestic audience, the second part needed actual logistical assistance from a navy that was prepared to cooperate. In hindsight, it is clear that Kirk made the decision without thinking through the logistics of the proposed operation. The politicians did not give any thought as to how the frigates were to be supported 2600nm away from base for a period of up to two months without a tanker.[148]

There was public outrage against the testing in Australia and New Zealand. Australian Prime Minister Gough Whitlam did not support the New Zealand decision to send a naval vessel to Mururoa but was keenly aware from internal briefings that the RNZN could not keep a warship on station without support. Both had a mandate and a desire to make grand political gestures. Kirk lobbied Whitlam intensely for weeks to reconsider his stance on support for the frigates. The consequences of the lobbying were described in HMAS *Supply's* June Report of Proceedings:

> Activities in the ship throughout the month have been dominated by the projected deployment to the French nuclear test area at Mururoa atoll in support of a New Zealand frigate. The uncertainty of the commencement of the deployment, the length of it or even whether it would actually eventuate was generally disturbing to the Ship's Company.[149]

The issue of replenishment at sea and the need for Australian assistance was solved with the help of Bob Hawke, then leader of the Australian Council of Trade Unions who successfully pressured the Australian Government to send the tanker *Supply* as the support ship for the RNZN frigates. However, they would not be sending a warship along with the tanker.[150] The *Oxford Companion to Australian Military History* states that for *Supply* 'her most controversial role was to act as support ship to a New Zealand contingent near Mururoa protesting against the 1973 series of French nuclear tests.'[151] By June the rumour in Australia was that the ship was departing on a mission 'specially ordered by the government.'[152] The Whitlam government only agreed to the

support for New Zealand 'as a last resort in trying to stop the tests.'[153] On Friday 22 June 1973, the Commanding Officer of *Supply* warned the ship's company that their ship was likely to be sent in support of *Otago* off Mururoa leaving on Monday 25 June. On Saturday afternoon '*Supply*'s ship's company were informed unofficially via a news broadcasting service'. On the morning of 25 June Captain Loosli, RAN, officially informed the ship's company that *Supply* would sail at 1200.'[154]

The report of proceedings does note, however, that strikes on the wharf in June affected its ability to load efficiently.[155] Her capacity was stretched to take on the supplies needed for the deployment. Fortunately, the beer supply had already been loaded before Sydney's breweries were out on strike.[156] Interestingly, both the RNZN and RAN allowed personnel to opt out of the deployment, if, in the case of the RAN personnel, for political reasons they objected to the deployment.[157] *Supply* was a fast fleet replenishment tanker that was originally ordered by the RAN but served with the RN as Royal Fleet Auxiliary (RFA) *Tide Austral* until it was returned to the RAN and commissioned into service as *Supply* in September 1962.[158] By the time of its service to the RNZN, it had undergone a major refit and was capable of supplying the fuel and water the NZ ships required along with food uplifted from Rarotonga. The Royal New Zealand and Australian air forces would airlift supplies to Rarotonga for uplifting and replenishment of the RNZN frigates at sea.[159] Fortunately, the New Zealand Government was never made aware of the irony that the fuel *Supply* provided to the RNZN frigates came through a contract with a French company.[160]

On 7 June, Kirk announced in Parliament that any frigate that was sent into the French test zone 'would not enter territorial waters.'[161] While it had been assumed that this would be the case, this was the first official public statement from the government that unequivocally demonstrated the intent of the deployment.[162] On 20 June 1973, the New Zealand Defence Minister publicly announced that two frigates of the RNZN were on standby ready to sail into the nuclear test zone round the South Pacific atoll of Mururoa in protest against the French program. It was emphasised that the contingency plan did not commit the government to any final decision. On 22 June, the International Court of Justice issued a ruling on provisional measures saying, 'The French Government should avoid nuclear tests causing the deposit of radio-active fallout on the territory of New Zealand, the Cook Islands, Niue, or the Tokelau Islands.'[163]

France simply ignored this ruling and let it be known that it was about to conduct a series of tests for the year. As the ships were being despatched to Mururoa, Kirk sought support for a Commonwealth ban on nuclear testing from Britain, but was rebuffed because Britain was benefiting from data generated by the French tests.

Operations off Mururoa June-August 1973

The first vessel deployed by the RNZN was again HMNZS *Lachlan*, which conducted signal intelligence gathering and spent the period from 21 June to 1 July 1973 steaming off Rarotonga. Dealing with a rhinoceros beetle tracking activity, eavesdropping on French radio communications and assisting HMNZS *Irirangi* with bearings, *Lachlan* ensured the directional aerials could be focused on the French communications.[164] In a small token of cooperation, *Lachlan* refuelled at sea from the RFA tanker *Tideflow*. Nevertheless, the British made it very clear to the New Zealand Government and navy that they were not supporting the New Zealand protest action.[165] On 2 July, *Lachlan* returned. A course had been set to avoid *Otago* so that *Lachlan*'s part in obtaining signal intelligence was kept from the media contingent aboard *Otago*. *Otago* was to behold herself in readiness until 8 July when HMNZS *Canterbury* would take over.[166] Australia, 'had intimated that it would take part in any such operation by offering assistance with a supply ship.'[167] *Canterbury* was the only RNZN frigate that could operate in a nuclear environment but was presently based at Pearl Harbor and would only be available for deployment to Mururoa by mid July at the earliest. With engine problems while on deployment in June, *Canterbury* only arrived in New Zealand two days after *Otago* had left.[168]

With the French determination to conduct tests, the political situation changed very rapidly by the last days of June. Preparations were brought forward and *Otago* underwent a self-refit for deployment to Mururoa.[169] The Minister for Immigration and Mines, Fraser Colman, was selected as the cabinet minister to sail with *Otago*. At the date of departure on the 28 June, Kirk at a dockside press conference stated 'this is a mission of purpose' and the voyage of *Otago* would 'ensure that the eyes of the world are riveted on Mururoa'. He assured New Zealanders that this voyage 'was not conceived in anger but born of deep concern'.[170] Kirk also said:

> we are a small nation but in the interests of justice we claim the world's attention ... Today the Otago leaves on an honourable mission. She leaves not in anger but as a 'silent accusing witness' with the power to bring alive the conscience of the world ... and make a contribution to the continuing quest for peace and disarmament.[171]

On 28 June, the French Government released a White Paper accusing New Zealand and Australia of having other motives besides protesting against the harm of atmospheric testing. It postured 'At the origins of certain campaigns is there not a desire to harm our [France's] defence policy and contravene our will to independence?'[172] It was, in the eyes of the French Government, a 'campaign of hostility' against the forthcoming French nuclear tests in the Pacific 'without serious scientific basis.'[173]

Nevertheless, the RNZN operational order stated that the mission was:

> To proceed towards Mururoa without entering the Test Area. When so ordered, you are to operate within the Test Area in a manner best designed to achieve the Government's policy objectives.

> This will be a symbolic gesture by a small country and the deployment of a frigate 'is a major political protest against the French tests. [But] the voyage is to have no overtones of sabre rattling…'[174]

The government did not interfere with the operation once the ship left New Zealand.[175] *Supply* left Sydney and crossed the Tasman to rendezvous with *Otago* on Friday afternoon 29 June, 250nm east of North Cape.[176] A trial replenishment at sea was carried out at 1400 with the media contingent aboard *Otago* as interested bystanders.[177] The RAN *Navy News* records that there were:

> nerves aboard the Australian ship as *Supply* had not done a [replenishment at sea] for some months, this was an ideal opportunity to get the rigs working smoothly again and get a good bit of world publicity.[178]

The frigates commanding officers were advised that *Supply* would be sailing under the direct control of the Australian Government. The frigates would 'liaise directly with the logistical vessel to achieve tactical and support cooperation … arrangements for support will be on a request, not an order basis.'[179] *Otago* would remain in company with *Supply* until 3 July.[180]

Both ships sailed north-eastwards in company while wind-direction balloons were released and tracked with the fire-control radar so *Otago* would be able to measure patterns of fallout. The crew was kept busy undertaking nuclear, biological, and chemical defence exercises every day while both ships carried out joint exercises.[181] Having embarked, the journalists now worked to the government's advantage. When *Supply* came alongside for refuelling on 30 June the process was recorded on film and sent for broadcast.[182] This engaged the Australian public's 'sympathy for the initiative.'[183] The two ships exchanged personnel for a 24-hour period. 'Those who went from *Supply* found the Kiwi an interesting change.' One thing that caught the Australian's attention was the daily issue of the rum tot as well as the beer issue. It was arranged that *Otago* would transmit a request for replenishment from the Australian ship when necessary. The tanker was under direct orders to come within 120nm of Mururoa. Replenishment at sea would be carried out in a 'support area' provided it did not stop the frigate from being able to observe the test. It was recommended that there be a 10-day gap between replenishments, although in practice it never met that stated objective.[184]

On 3 July, *Otago*'s Commanding Officer reported that:

> Supply: Relationship is excellent. Quite naturally, *Supply* is keen to work up after her refit and this has tended to conflict with *Otago's* special-to-role training requirements, but this has not presented any undue difficulty. A balance has been struck which is mutually beneficial.[185]

Replenishment at sea was carried out that day.[186]

Supply voyaged to Rarotonga over the next two days to pick up the air freighted supplies and drop off mail. The ship's company now had a pleasant two day holiday if the reports in the *Navy News* are correct.[187] On 4 July, *Otago* received orders from Wellington to pass into the French-declared 'Intermediate Area' with instructions to contact by Morse code twice a day on an unidentified radio station.[188] It was discovered later that this was the safety link to the French authorities. The action was initiated by the French response to Kirk's note of 23 June when France stated that it would proceed with its tests despite the presence of *Otago*. Kirk assured them that the frigate would not enter French territorial waters; the warship would operate in what the French called their 'danger zone'.[189] France then advised it was activating the test zone equal to 120nm around the test site, the area that *Otago* would be entering. *Otago* occupied a 10nm wide observation area outside the territorial sea around Mururoa, and released and tracked weather balloons.[190]

On 5 July, *Otago* was informed that *Canterbury* would be replacing her on station later in the month. France formally activated the test zone on 8 July 1973, a French Dunkerque class minesweeper appeared three miles off *Otago*'s stern, and shadowed it until contact was broken when *Otago* changed course.[191] *Supply*'s next replenishment at sea with *Otago* occurred on the evening of 9 July 1973. The men on *Otago* nicknamed *Supply* 'mamma sup' and said its 'assistance and cooperation ... was outstanding.'[192] This was despite some confusion over the precedence of signals between the two ships.[193] At the next replenishment at sea on Thursday 12 July, *Supply*'s baker presented a mushroom cloud loaf to the New Zealand ship.[194] *Supply* then returned to Rarotonga, leaving on 18 July to replenish *Canterbury*, which had arrived from New Zealand to take over from *Otago*. Unfortunately, a contaminated boiler prevented the handover.[195]

The writer of the *Navy News* article noted that for the media aboard *Otago* it was a 'historic occasion inasmuch that the presence of two ships in the nuclear zone represented the determination of the Australian and New Zealand governments to carry to the limit possible their objection to France carrying through the nuclear test.'[196] The United States had a different task. USS *Wheeling* was despatched to be 'an essential observation platform to acquire important data from a foreign atmospheric nuclear test.'[197] Its mission was not to be publicly announced but was seen as a 'valuable means of expanding American knowledge about the effect of nuclear weapons for relatively moderate amounts of money.'[198] The American commander reported that the presence of US Navy vessels and helicopters 'appeared to cause no adverse reactions by the French.'[199] Along with the US Navy, there was RFA

Sir Percival, Soviet research vessels *Akademic Shirshov* and *Volna* plus a Chinese fishing vessel gathering signals intelligence.[200] All the major nuclear powers had naval forces acting as observers of the test. In this 'great game' of intelligence gathering, only the RNZN was acting in a protest role.

On the morning of 21 July, *Otago* was 21.5nm from the detonation point when the device was tested.[201] The ship's company was disappointed with the size of the cloud and the yield was estimated by the New Zealanders to be 5 kilotons.[202] On the same day, *Canterbury* joined up with *Supply.* When the device detonated, *Supply* was 350nm from the atoll.[203] *Otago* met up with *Supply* on 22 July and returned to the observation area until the next day with *Canterbury* in company. The next day, *Supply* replenished both frigates and returned to Rarotonga with the media contingent aboard.[204]

HMNZS *Canterbury*

After arriving home, the government announced on 12 July that *Canterbury* was going to Mururoa to take over from *Otago*. Departing on 14 July, *Canterbury* was equipped with the its first onboard computer nicknamed 'Clarence', which would be used to monitor the yield of the French bomb and fallout.[205] She carried out her first replenishment at sea with *Supply* on 18 July. *Canterbury*'s Wasp helicopter was used to transport supplies between the ships along with the jackstay.[206] Despite being hampered by contamination in the port boiler on 20 July, *Canterbury* reached point 'BB' on the 22nd to rendezvous with *Otago*.[207] Some of the supplies were ruined by salt water as they had been packed in cardboard cartons despite the RNZN request for wooden packaging.[208] *Otago* was ordered back to Mururoa to observe what was thought to be the second test. While *Canterbury* fixed some engineering issues, *Otago* remained on duty and moved to a new location for observation. *Canterbury* was not permitted to relieve *Otago* until 25 July.

Supply also took two RNZN personnel aboard to return them to New Zealand for compassionate reasons and was 'a great morale booster' for *Otago*'s ship's company.[209] *Supply* again remained at Rarotonga for two days. On 25 July, as per orders issued to *Canterbury,* the frigates rendezvoused for the last time and *Otago* handed over the equipment for monitoring the tests along with Fraser Colman and the media party. Due to sea conditions, the helicopter was used to transfer between the frigates.[210] *Otago* departed for Auckland and a further rendezvous with *Supply* on 28 July before proceeding to Auckland.[211] During this replenishment, the second test was carried out.[212] This was a record for the ship while underway and the 9237.5nm steamed was only possible with the assistance of *Supply*.[213] The Commanding Officer of *Otago* noted in his report that:

> Her [*Supply's*] service had been outstanding and very much appreciated by all in *Otago.* For us the glamour, for her the drudgery. *Supply* deserves a big hand for her work in the support role.[214]

After a delay noted by *Canterbury* from the radio traffic in the morning of 28 July, a device was detonated at 1032 feet.[215] There were some hold-ups in the countdown and an alarm was sounded that caused the French fleet to sail southwards. *Canterbury* followed in order to avoid the potential fallout zone.[216] The explosion was not heard or seen by men on *Canterbury*. It was a much smaller yield than the previous test and could not be recorded. Tiny amounts of fallout were recorded but did not pose a danger for the crew. Based on the measurements there was some thought that this was a nuclear trigger rather than an operational bomb.

Canterbury undertook a replenishment at sea with *Supply* on 31 July three days after the test.[218] The Australian ship also participated in officer of the watch manoeuvres with the junior officers aboard the frigate.[218] What was expected next was unclear to both ships. A further resupply flight had not been arranged and reports indicated that the French naval vessels had left Mururoa for a stand down period in Papeete.[219] Despite this, *Canterbury* returned to carry out observations and *Supply* remained on hand sailing a 'race-track' course. The protest vigil could only be maintained with the logistical support of the RAN the deployment was in their hands. On 3 August 1973 the Minister of Defence, Arthur Faulkner announced that *Canterbury* would return to New Zealand because the decision to withdraw *Supply* had been made by the Australian Government. The minister stated:

> We have always recognised that logistic consideration would limit the length of time the frigate could remain on station in the Mururoa area [and] the return of the ship [*Supply*] will take place in accordance with plans prepared before the operation began by agreement with the Australian Government.[220]

The next resupply was undertaken on 4 August. *Canterbury* returned to the observation zone while *Supply* returned to Rarotonga.[221] *Canterbury* left for New Zealand on 6 August. *Supply* took one last supply drop from the Royal Australian Air Force on the 7 August before meeting *Canterbury* the next. After the replenishment, both ships parted for the last time with a hearty cheer from both companies.[222]

Faulkner described the deployment of the frigates as:

> A turning point in the campaign against French nuclear tests because their [the frigates] presence had concentrated world attention on the test issue to an extent which may have surprised some critics but not the government.[223]

The Commanding Officer of *Otago* reported:

> I am left with the feeling that the Mururoa deployment did the Royal New Zealand Navy a power of good, both in coping with an extended operation and in proving that given a job to do, no matter how contentious

or unusual, the New Zealand Armed Forces will get on with the tasks and produce the results.

Canterbury's Commanding Officer reported upon his return to New Zealand:

> A pleasant Government reception was held ... and was enjoyed by the ship's company. Although they felt such treatment was hardly justified by the Mururoa mission as such, they were gratified that the navy should receive public recognition in time of peace.[224]

The RNZN summary of the operation noted that the frigates were 'an official tool of the government, and the ideal vehicle on which to base witnesses to the events'.[225] The 1974 Ministry of Defence annual report noted that 'without this support [from the RAN] the frigates could not have remained on station for the length of time required to maintain the presence in the test zone.'[226] Dependence on the RAN showed the need for a replenishment tanker of our own and there was hope in New Zealand that a replacement for the HMNZS *Endeavour* (II) would be forthcoming shortly, however, they did not get one until 1988.[227] This was not the only form of cooperation in 1973. In late September and early October, *Canterbury* and *Otago* also participated in Exercise LONGEX 73 with ships from the RN, RAN, US Navy and Royal Netherlands Navy.[228] Further, ten RAN vessels and two RN vessels visited New Zealand ports in 1973.[229]

As a contrast to cooperation in 1973, Operation VALERIAN in 1995 would be one of non-cooperation, reflective of the changes in the political outlooks of Australian and New Zealand Governments in the intervening period.

Operation VALERIAN

VALERIAN was a naval deployment in which New Zealand did not get any cooperation from other Commonwealth navies. Although New Zealand sent a ship as part of a protest, it was not in the same mould as the 1973 deployment. In essence, the RNZN vessel would have a strict role as a spectator to the tests.

On 13 June 1995, French President-elect Jacques Chirac announced the resumption of underground nuclear testing at Mururoa. He believed in the strike force concept and wanted testing carried out for the new TN-75 warheads that were to be fitted to ballistic missiles carried on French submarines.[230] Two reasons given for the resumption of testing was to verify the safety and reliability of the devices and to develop warheads with better yield-to-weight ratios.[231] The New Zealand Cabinet was already aware in early May that a resumption of the testing was likely and had begun to discuss a strategy of responding. At this point, sending a naval vessel was not on the list of proposed responses.[232] They were aware that Chirac had committed himself to a new series of tests as part of his election campaign 'if it [France] wants to be able to do without them afterwards.'[233]

Don McKinnon, the Minister for Foreign Affairs, was very clear that France was making an effort in the South Pacific and had been supporting New Zealand's interests. Therefore, New Zealand's response should not affect the relationship with economic consequences.[234] He wanted his cabinet colleagues to keep in mind the 'implications for New Zealand's interests of the various options [he put forward] for further measures to record New Zealand's concern.'[235] The next day Prime Minister Jim Bolger advised the house of the resumption. His calculated outrage for a brief moment unified Parliament and a statement was issued deploring the French.[236] It was proposed that another frigate be sent in a repeat of 1973.[237] This time of course, New Zealand did not have to rely on Australia, as they now possessed a fleet tanker, HMNZS *Endeavour*. In light of the *Rainbow Warrior* bombing a decade earlier, the outrage is understandable. A poll taken in July 1995 indicated that 63 per cent of those polled supported sending a frigate and 86 per cent wanted some form of direct action.[238]

Despite the public outcry, Australia would not deploy a naval vessel arguing that they should be used for naval purposes such as naval warfare. Wellington took the view that Australia's stance, while being more adamant than New Zealand's, was a belated and exaggerated gesture to placate anti-nuclear domestic interests rather than an international expression of disappointment.[239] Australian Foreign Minister Gareth Evans commented that New Zealand's stance and action of sending a naval vessel 'muscle-bound' was hypocritical grandstanding.[240] He later regretted those comments as the Australian Government responded to domestic pressure for a response to match that of the New Zealanders.[241] The Liberal Party opposition had argued for sending a frigate only to be accused of 'adolescent grandstanding of the worst kind' by Evans.[242] Evans wished to keep things in proportion and made the point that this was not a repeat of 1973, the tests were underground and the French had stated the intent was a limited series.[243] However, other state and federal politicians were entranced by the prospect of sending a protest ship to Mururoa. The federal government even committed $200,000 towards a vessel that had been chartered. The effort came to naught when the vessel was declared unseaworthy.[244]

Both Australian Prime Minister Paul Keating and Jim Bolger realised that they needed to present a united front, endorsed each other's efforts, and tried to avoid one-upmanship. However, they stopped short of a joint campaign 'citing significant differences of emphasis.'[245] The National Government was made very aware that using a warship in the way intended by New Zealand was not a fit and proper purpose for warships. On 18 July 1995, Bolger announced that there was broad agreement to send a RNZN ship to support the protest fleet. HMNZS *Tui* was identified as the ship to be sent to Mururoa and it was also agreed that two politicians would voyage to the testing zone.[246] The RNZN would be sending an unarmed oceanographic research ship and not a warship; a gesture intended not to antagonise the French further. Just like *Otago* in July 1973 *Tui* would be another 'silent witness'.[247] However, this

time *Tui* was under strict orders neither to breach the French exclusion zone nor to give any assistance to the protest fleet unless it was 'emergency succour required by maritime convention.'[248]

Tui departed Auckland for Mururoa on 14 August 1995.[249] The voyage would be under the control of the RNZN with an interdepartmental 'watch group' providing guidance on the legal, political, and media aspects of the operation.[250] In contrast to Mururoa, this operation was more intensely micromanaged from Wellington. Adding to the burden of command were the politicians aboard. As *Tui* sailed to Rarotonga, the commanding officer had 'some doubt as to the sea worthiness of the two embarked politicians.'[251] The satellite communications system received many calls from the media in New Zealand getting updates on seasickness of the politicians. The highly excitable politicians failed to appreciate customs of the naval service when a French naval vessel was met on the high seas. Pressure was also applied by the politicians who wanted *Tui* to enter French territorial waters to make short cuts to meet up with the protest fleet. The two tests were conducted on 5 September and 1 October. The second one was missed by the politicians who were aboard one of the protest vessels in discussion about what sort of response to send to France about the first test.

The post deployment report indicated that 'from a military perspective, the mission was achieved' but that 'a number of difficulties that arose with the passengers could have been averted had proper vetting been conducted'.[252] It was also recommended that 'passengers on a politically orientated deployment such as this one … be subject to background checks.'[253]

Conclusion

RNZN participation in nuclear testing is a good example of Commonwealth naval cooperation in the 20th century. New Zealand naval forces have a long and close history of cooperation with Commonwealth navies. This has ranged from the gifting of battlecruisers, payments to the RN, provision of dockyards, provision of trained workers, to participation in nuclear testing. We have also had non-cooperation for the Mururoa protests which was forcibly changed by actions of a non-naval political organisation. Without that, it is hard to see if the protests could have been sustained. Finally, New Zealand went it alone using its naval vessels in a way that other countries would not.

New Zealand, despite some reservations, willingly participated in Operation GRAPPLE nuclear testing in 1957 and 1958. I discuss this period to illustrate the form of cooperation between the RN and RNZN and how it was shaped by political considerations. In the 15 years that elapsed between the conclusion of GRAPPLE tests and the 1973 French tests the posture of the New Zealand Government had changed with respect to atmospheric testing in the Pacific.

The political will for direct action came with the 1972 election of a Labour Government under Norman Kirk. Two New Zealand frigates were despatched to Mururoa in June-July 1973. This action illustrates cooperation between the RAN and the RNZN. Between June and August 1973, while other navies carried out surveillance operations of the French tests, the New Zealand ships were messengers of protest with the invaluable assistance of Australia.

In 1995, with the resumption of testing at Mururoa, the New Zealand Government once again deployed a RNZN vessel to the atoll as part of Operation VALERIAN. This time, there was no cooperation. This example shows how the Australian and New Zealand governments responded differently to public clamour for action and the use of a naval vessel as an instrument of protest.

Notes

1. Wade Huntley, *Security or Spectacle?: Foreign Policy Realism and Nuclear-Free New Zealand*, Working Paper No. 126, Peace Research Centre, Canberra, 1993, p. 7. Quoting from Keith Sinclair, *Distance Looks Our Way*, p. 39.

2. TA Brassey (ed), *The Naval Annual 1909*, J Griffin and Co, London 1909, p. 12.

3. Based on New Zealand's population at the time, it worked out to be £2/4 for every man, woman and child. The loan was finally paid off by the government in 1944. Today's equivalent would be approximately NZ$350 million.

4. David Stevens (ed), *The Royal Australian Navy: The Australian Centenary History of Defence Volume III*, Oxford University Press, Melbourne, 2001, p. 188.

5. Christopher Pugsley, *From Emergency to Confrontation: The New Zealand Armed Forces in Malaya and Borneo 1949-66*, Oxford University Press, Melbourne, 2003, p. 36.

6. Pugsley, *From Emergency to Confrontation*, p. 38.

7. Pugsley, *From Emergency to Confrontation*, p. 38. See also Burchill, Smith & Cox, *Australia in the World: An Introduction to Australian Foreign Policy*, Oxford University Press, Melbourne, 1996, p. 56.

8. Pugsley, *From Emergency to Confrontation*, p. 37.

9. Pugsley, *From Emergency to Confrontation*, p. 37.

10. Pugsley, *From Emergency to Confrontation*, p. 40.

11. David Stevens (ed), *Maritime Power in the Twentieth Century: The Australian Experience*, Allen & Unwin, Crows Nest, 1998, p. 144.

12. Stewart Firth, *Nuclear Playground*, Allen & Unwin, Crows Nest, 1987, p. 9.

13. Firth, *Nuclear Playground*, p. 10.

14. Lorna Arnold, *A Very Special Relationship: British Atomic Weapon Trials in Australia*, HMSO, London, 1987, pp. 27-28.

15. Denys Blakeway & Sue Lloyd-Roberts, *Fields of Thunder: Testing Britain's Bomb*, Unwin, London. 1985, p. 2.

16. Maurice Hayman, *Those Useless Wings, Operation Grapple*, Privately Published, undated, p. 18.

17. Arnold, *A Very Special Relationship*, p. 76.

18. Arnold, *A Very Special Relationship*, p. 76.

19. Blakeway et al, *Fields of Thunder*, p. 144. See also *Evening Post*, 24 December 1955.

20. Wilfred E Oulton, *Christmas Island Cracker: An Account of the Planning and Execution of the British Thermo-Nuclear Bomb Tests 1957*, Thomas Harmsworth Publishing, London, 1987, p. 8. See also Arnold, *A Very Special Relationship*, p. 77; and Firth, *Nuclear Playground*, pp. 16-17.

21. Keith Hubbard and Michael Simmons, *Dropping Britain's First H-Bomb: The Story of Operation Grapple 1957/1958*, Pen & Sword Aviation, Barnsley, 2008, p. 58.

22. Hubbard, *Dropping Britain's First H-Bomb*, pp. 51-52.

23. JAB Crawford, *The Involvement of the Royal New Zealand Navy in the British Nuclear Testing Programmes of 1957 and 1958*, Headquarters New Zealand Defence Force, Wellington, 1989, p. 3.

24. New Zealand National Archives PM 121/5/2, International Affairs, Atomic Energy, Military Uses Experiments: Telegram from Eden to Holland, undated but believed to be 16 May 1955.

25. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 3.

26. Christopher Pugsley, 'Malayan Emergency', in Ian McGibbon (ed), *The Oxford Companion to New Zealand Military History*, Oxford University Press, Auckland, 2000, p. 294. See also Pugsley, *From Emergency to Confrontation*, p. 45.

27. Ian McGibbon, 'The Defence of New Zealand 1945-1957', in AD McIntosh, M McKinnon & B Brown, *New Zealand in World Affairs*, vol. I, New Zealand Institute of International Affairs, Wellington, 1977, pp. 169-170.

28. Nigel Roberts, *New Zealand and Nuclear Testing in the Pacific*, New Zealand Institute of International Affairs, Wellington, 1972, p. 4.

29. Stephen Hoadley, *New Zealand and France: Politics, Diplomacy and Dispute Management*, New Zealand Institute of International Affairs, Wellington, 2005, p. 41.

30. Gerry Wright, *We Were There: Operation Grapple*, Zenith Publishing, New Plymouth, undated, p. 16. See also New Zealand National Archives PM 121/5/2 International Affairs, Atomic Energy, Military Uses Experiments: 'Brief Notes on Kermadec and Pitcairn Group', Office of Minister of Defence to Prime Minister 10 June 1955.

31. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 5.

32. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 4.

33. New Zealand National Archives PM 121/5/2 International Affairs, Atomic Energy, Military Uses Experiments: Telegram from Eden to Holland.

34. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 7.

35. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 5.

36. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 6.

37. New Zealand National Archives Agency ABFK Series 7607 Accession W5056 Box 114, 3320/4/2 Part 1 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Nuclear Warfare (General): Tests (Incl Monitoring by NZ) 1988-1989. HMNZS *Lachlan* Report of Proceedings 17 January – 7 March 1956. See also Oulton, *Christmas Island Cracker*, pp. 149, 180, 252.

38. Hubbard, *Dropping Britain's First H-Bomb*, p. 51.

39. New Zealand National Archives Agency ABFK Series 7607 Accession W5056 Box 114, 3320/4/2 Part 1, p. 1.

40. HMNZS *Lachlan*, Report of Proceedings, dated 12 March 1956, p. 2.

41. HMNZS *Lachlan*, Report of Proceedings, dated 12 March 1956, p. 2.

42. Hubbard, *Dropping Britain's First H-Bomb*, pp. 52-53, 191.

43. Hubbard, *Dropping Britain's First H-Bomb*, p. 191.

44. Derek Robinson, *Just Testing,* Collins Harvill, London, 1985, pp. 161-162, 165.

45. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 4. See also draft press statement for Minister of Defence and External Affairs TL MacDonald dated 28 February 1957.

46. New Zealand National Archives EXO 0006 Operation GRAPPLE – background document D12/1/1 dated 1 January 1987.

47. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 3 International Affairs – Atomic Energy Military Uses Experiments 1/6/1956-31/12/1956. Letter from High Commissioner to Minister of Defence dated 26 July 1956.

48. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 7.

49. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. Memorandum for Minister of External Affairs from Navy Office dated 17 January 1957. In was in this year that the Labour government had brought in the infamous 'Black Budget'.

50. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 3 International Affairs – Atomic Energy Military Uses Experiments 1/6/1956-31/12/1956. Letter from High Commissioner to Minister of Defence dated 26 July 1956.

51. Letter from High Commissioner to Minister of Defence dated 26 July 1956. See also New Zealand National Archives 016/8/52 Operations-Training Operation Grapple – UK High Commissioner Wellington to Minister of External Affairs 26 July 1956; Andrew McEwan, *Nuclear New Zealand: Sorting Fact from Fiction,* Christchurch: Hazard Press, 2004, p. 105; and Crawford, *The Involvement of the Royal New Zealand Navy*, p. 8.

52. New Zealand National Archives 06/46/10 extract from dated 3 October 1956. HMNZS *Hawea* was chosen originally but it was decided to bring *Rotoiti* out of reserve.

53. *Auckland Star* 13 April 1957. See also Crawford, *The Involvement of the Royal New Zealand Navy*, p. 10.

54. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. Diplomatic Cable dated 5 February 1957 London Press Service. Quote from Undersecretary for Foreign Affairs Ian Harvey.

55. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. Draft note for Minister of External Affairs dated 20 March 1957.

56. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. This file contains news reports and cuttings about the Japanese protests and suggests it is Communist influenced.

57. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 11.

58. New Zealand National Archives EXO 0006 Operation GRAPPLE – Warrant Commission to Lieutenant Commander W J Brown CO of HMNZS *Rotoiti* undated.

59. Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. Memorandum from Prime Minister's Office to Minister of External Affairs dated 12 February 1957.

60. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. Press statement dated 5 March 1957 from Department of External Affairs.

61. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957. Draft Press Statement 15/2/1957.

62. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 5.

63. New Zealand National Archives Appendix F to GRA/415/SEA NA 016/8/52 Operations Training etc. – Operation Grapple: Navy Secretary to NOCA 11 October 1956.

64. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 4 International Affairs – Atomic Energy Military Uses Experiments 1/1/1957-31/3/1957 'News from Fiji' press release dated 13 March 1957.

65. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 18.

66. New Zealand National Archives Agency ABFK Series 7607 Accession W5056 Box 114. 3320/4/2 Part 1 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Nuclear Warfare (General): Tests (Incl Monitoring by NZ) 1988-1989. Letter from Secretary of Defence to Pensions Officer NZRSA dated 18 September 1986.

67. New Zealand National Archives Appendix F to GRA/415/SEA NA 016/8/52 Operations Training. See also McEwan, *Nuclear New Zealand*, p. 107.

68. RNZN Museum Archive EXO 0006 – HMNZS *Rotoiti*, Classified Report dated 17 June 1957.

69. Wright, *We Were There*, p. 46. See also HMNZS *Rotoiti* Classified Report dated 17 June 1957.

70. HMNZS *Rotoiti* Classified Report dated 17 June 1957. See also Wright, *We Were There*, p. 47. See also RNZN Museum Archive EXO 0006 Loch Class Frigates A B C D Handbook issued 5 November 1957 – Navy Office Wellington.

71. RNZN Museum Archive EXO 0006 Operation GRAPPLE – Nominal Lists of Officers Borne for HMNZS *Pukaki* as at 1 February 1957, 18 February 1958, and 24 June 1958.

72. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 21.

73. New Zealand National Archives GRA/415/SEA NA 016/8/52 Operations Training etc. – Operation Grapple.

74. Hubbard, *Dropping Britain's First H-Bomb*, p. 53.

75. Film in RNZN Museum collection has sequences of helicopters operating with HMNZS *Pukaki*. These were Westland Whirlwind helicopters operating from HMS *Warrior*. See also Hubbard, *Dropping Britain's First H-Bomb*, p. 53. New Zealand National Archives EXO 0006 HMS *Warrior*, Report of Proceedings, 19 May-3 June 1957, p. 1.

76. HMS *Warrior*, Report of Proceedings, 19 May-3 June 1957, p. 1.

77. New Zealand National Archives 016/8/52 Operations Training etc. – Operation Grapple: Appendix 2 to Enclosure 'A' to 173/95 100/6 of 17 October 1957 Statement of Protective Gear and Radiac Instruments Being supplied from RN Sources.

78. Hubbard, *Dropping Britain's First H-Bomb*, pp. 53-55.

79. New Zealand National Archives 016/8/52 Operations Training etc. – Operation Grapple: Appendix 2 to Enclosure 'A' to 173/95 100/6 of 17 October 1957 Statement of Protective Gear and Radiac Instruments Being supplied from RN Sources; also of note, the Atomic Weapons Research Establishment designed radiation safe dress for use during testing. This kit included contamination coveralls, an outer suit to be taped to boots and gloves, a Mark 17 gas mask, hood with neck flap, cotton gloves and canvas booties.

80. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 26.

81. RNZN Museum Archive EXO 0006 Operation GRAPPLE – HMNZS *Rotoiti* Quarterly Medical Report 1 July 1957, p. 2 and Report on Health of the Royal New Zealand Navy 12 July 1957 Medical Officer aboard HMNZS *Pukaki*.

82. New Zealand National Archives Agency ABFK Series 7607 Accession W5548 Box 163 3320/4/2 Part 2 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Tests 1989-1995. Fax of Letter from W N Saxby Atomic Weapons Establishment to S Prior New Zealand High Commission London sent to Secretary of Defence Wellington dated 25 July 1988.

83. New Zealand National Archives Agency ABFK Series 7607 Accession W5548 Box 163 3320/4/2 Part 2 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Tests 1989-1995. Fax of Letter from WN Saxby Atomic Weapons Establishment to S Prior New Zealand High Commission London sent to Secretary of Defence Wellington dated 25 July 1988.

84. New Zealand National Archives Agency ABFK Series 7607 Accession W5056 Box 114. 3320/4/2 Part 1 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Nuclear Warfare (General): Tests (Incl Monitoring by NZ) 1988-1989 – Report to Commodore GRAPPLE Squadron HMS *Warrior* from CO HMNZS *Rotoiti* on ABCD Information dated 17 June 1957.

85. New Zealand National Archives 016/8/52 Operations Training etc. – Operation Grapple: Lieutenant-Commander WJ Brown to CGS 17 June 1957 NA 06/1/33 and Paras 8 and 12 of Enclosure A to 173/95. 100/6 of 17 October 1957. Three men fainted due to the heat in the engine room.

86. New Zealand National Archives Agency ABFK Series 7607 Accession W5056 Box 114. 3320/4/2 Part 1 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Nuclear Warfare (General): Tests (Incl Monitoring by NZ) 1988-1989 – Letter to NZDF Liaison Staff from Atomic Weapons Establishment 14 July 1988 quoting from HMS *Warrior*'s ship's log.

87. New Zealand National Archives PM 121/5/2 Confidential Report on the Observation of the British H-Bomb Test in the Pacific on 15 May 1957 by HJ Yeabsley (a record of a verbal report given to the Prime Minister, Minister of External Affairs and Minister of Health on 21 May 1957) undated.

88. RNZN Museum Archive EXO 0006 Operation GRAPPLE – Provisional Timetable for the Movement of HMNZS Ships *Pukaki* and *Rotoiti* During Operation GRAPPLE D12/1/1.

89. New Zealand National Archives Agency ABFK Series 7607 Accession W5056 Box 114. 3320/4/2 Part 1 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Nuclear Warfare (General): Tests (Incl Monitoring by NZ) 1988-1989 – Letter from Commodore Grapple Squadron to The Navy Secretary Navy Office Wellington 19 June 1957. See also RNZN Museum Archive EXO 0006 Operation GRAPPLE.

90. Blakeway, *Fields of Thunder*, pp. 158-159.

91. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Personal Message from Macmillian to Holland dated 27 July 1957.

92. Crawford, *The Involvement of the Royal New Zealand*, p. 40.

93. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from Harold Macmillian to Sidney Holland 11 September 1957.

94. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from Holyoake to Macmillian dated 4 October 1957.

95. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Press statement dated 10 October 1957.

96. RNZN Museum Archive EXO 0006 Operation GRAPPLE: Loch Class Frigates A B C D Handbook issued 5 November 1957 – Navy Office Wellington.

97. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Note Dated 5 November 1957 – Future Megaton Tests Naval Assistance.

98. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from United Kingdom High Commissioner to PM Keith Holyoake dated 7 November 1957.

99. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 6.

100. New Zealand National Archives 0016/8/52 Secretary of External Affairs to Navy Secretary 19 December 1957. See also RNZN Report for 1958, p. 10.

101. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Note for File dated 7 November 1957.

102. HMNZS *Pukaki*, Report of Proceedings, April 1958.

103. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from United Kingdom High Commissioner Wellington to PM Keith Holyoake dated 28 November 1957.

104. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 6. See also article *New Zealand Herald* 11 May 1973.

105. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 49.

106. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter to Walter Nash from High Commissioner United Kingdom dated 3 January 1958.

107. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from Walter Nash to High Commissioner for the United Kingdom dated 13 January 1958. See also letter United Kingdom High Commissioner to Walter Nash dated 3 January 1958.

108. Robinson, *Just Testing*, p. 73. See also Crawford, *The Involvement of the Royal New Zealand Navy*, p. 49; and New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Memo to Navy Secretary from Secretary of external Affairs dated 13 January 1958.

109. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 50.

110. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Message from Macmillan to Nash dated 18 April 1958.

111. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from Ministry of External Affairs to High Commissioner for the United Kingdom dated 6 March 1958. See also Memorandum Department of External Affairs dated 28 February 1958.

112. HMNZS *Pukaki*, Report of Proceedings, April & May 1958.

113. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59 Extract from Hansard 29 April 1958.

114. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59. Letter from UK High Commissioner Wellington to Prime Minister Walter Nash dated 14 July 1958.

115. New Zealand National Archives 0016/5/52 British High Commissioner Mallaby to Nash 14 July 1958.

116. Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59 letter from Deputy High Commissioner United Kingdom to Secretary of Island Territories dated 23 July 1958.

117. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 56.

118. Crawford, *The Involvement of the Royal New Zealand Navy*, p. 53.

119. RNZN Museum Archive EXO 0006 Operation GRAPPLE – First Lieutenant's Temporary Memorandum No. 39 dated 1 September 1958.

120. HMNZS *Pukaki*, Report of Proceedings, September & October 1958. See also Provisional Timetable for the Movement of HMNZS Ships *Pukaki* and *Rotoiti* During Operation GRAPPLE D12/1/1. See also New Zealand National Archives Agency ABFK Series 7395 Accession W4010 Box 34 NA 62/6/1 part 1 Operations General: Operation GRAPPLE 1959-1961 - Message from Admiralty to New Zealand Naval Board dated 18 May 1960. The GRAPPLE Squadron was disbanded in 1960.

121. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59 letter from UK High Commissioner to NZ Department of External Affairs dated 13 November 1958.

122. In June 1966, HMNZS *Hickleton* engaged a sampan and remains the last RNZN warship to have fired its guns in anger.

123. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 7. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59 Extract from French Defence Policy dated 31 December 1959.

124. New Zealand National Archives Agency ABHS Series 950 Accession W4627 Box/File 121/5/2 Part 7 International Affairs – Atomic Energy Military Uses Experiments 31/3/58 – 31/12/59 Cable from Australian Paris Embassy to Department of External Affairs 13 January 1960.

125. Huntley, *Security or Spectacle?*, p. 11. This view of course comes from the Labour side of our politics.

126. *French Nuclear Testing in the Pacific: International Court of Justice Nuclear Tests Case New Zealand v. France*, Ministry of Foreign Affairs, Wellington, July 1973, p. 9. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 11.

127. Hoadley, *New Zealand and France*, p. 45.

128. *French Nuclear Testing in the Pacific*, pp. 9-10. See also *The Times*, 23 July 1973, p. 1.

129. *French Nuclear Testing in the Pacific*, p. 11.

130. Michael Field, 'Silent Witness to Nuke Fallout', *Dominion Post* 28 March 2006, p. A6.

131. Field, 'Silent Witness to Nuke Fallout', p. A6.

132. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 13.

133. *French Nuclear Testing in the Pacific*, p. 11.

134. Field, 'Silent Witness to Nuke Fallout', p. A6.

135. Roberts, *New Zealand and Nuclear Testing in the Pacific*, p. 17.

136. Hoadley, New Zealand and France, p. 46.

137. Hoadley, *New Zealand and France*, p. 47.

138. Hoadley, *New Zealand and France*, p. 48.

139. Hoadley, New Zealand and France, p. 49.

140. *The Times* 23 July 1973, p. 1.

141. EXN 0010 Mururoa Nuclear Tests 1973 – *The Auckland Star*, 24 January 1973.

142. *French Nuclear Testing in the Pacific*, p. 10.

143. Hoadley, *New Zealand and France*, p. 42.

144. *The Times* 17 May 1973, p. 8.

145. Hoadley, *New Zealand and France*, p. 51.

146. Peter Kitchin, 'Flying the Anti-Nuclear Testing Flag in the Pacific', *Dominion Post*, 17 May 2008, p. E10.

147. Kitchin, 'Flying the Anti-Nuclear Testing Flag in the Pacific', p. E10.

148. Kitchin, 'Flying the Anti-Nuclear Testing Flag in the Pacific', p. E10.

149. New Zealand National Archives FZM 0002 Documents relating to Mururoa 1973 – HMAS *Supply,* Report of Proceedings, June 1973, p. 1.

150. Hoadley, *New Zealand and France*, p. 51.

151. Peter Dennis, *The Oxford Companion to Australian Military History*, Oxford University Press, Melbourne, 1995, p. 576.

152. *Navy News*, 20 July 1972, p. 1.

153. EXO 0006 Operation GRAPPLE – David Barber, 'Blast Heard Round the World' *Sunday Star Times* 19 July 1998, p. 11.

154. *Navy News*, 20 July 1972, p. 2.

155. New Zealand National Archives FZM 0002 Documents relating to Mururoa 1973 – HMAS *Supply,* Report of Proceedings, June 1973, p. 2.

156. New Zealand National Archives HMAS *Supply,* Report of Proceedings, June 1973, p. 3.

157. New Zealand National Archives HMAS *Supply,* Report of Proceedings, June 1973, p. 1.

158. David Stevens, (ed), *The Royal Australian Navy: The Australia Centenary History of Defence Volume III*, Oxford University Press, Melbourne, 2001, pp. 193-194.

159. EXN 0010 Mururoa Nuclear Tests 1973 – article from *The Press* dated 6 July 1973. Specifically mentions Royal Australian Air Force flying from bases in NSW.

160. Stevens, *The Royal Australian Navy*, p. 231.

161. EXN 0010 Mururoa Nuclear Tests 1973 – *New Zealand Herald*, 8 June 1973.

162. *New Zealand Herald*, 8 June 1973.

163. Hoadley, *New Zealand and France*, p. 52.

164. New Zealand National Archives HMNZS *Lachlan*, Report of Proceedings, June 1973.

165. Gerry Wright, '30 Years Ago: The Navy at Mururoa', *The Raggie*, vol. 17, no. 3, 2003, p. 6.

166. *The Times* 21 June 1973, p. 9.

167. *The Times* 21 June 1973, p. 9.

168. EXN 0010 Mururoa Nuclear Tests 1973 – HMNZS *Canterbury,* Report of Proceedings, June 1973.

169. Self-refit: Prior to World War II, whenever a ship was in for any type of work by the dockyard it was known as a refit. In theory, the vessel under self-refit should be able to make steam within 48 hours.

170. *The Times*, 29 June 1973, p. 9.

171. Field, 'Silent Witness to Nuke Fallout', p. A6; and Hoadley, *New Zealand and France*, p. 54.

172. *The Times*, 29 June 1973, p. 9.

173. *The Times*, 29 June 1973, p. 9.

174. New Zealand National Archives FZM 0002 Documents relating to Mururoa 1973 – Operation Order.

175. New Zealand National Archives FZM 0002 Documents relating to Mururoa 1973 - Directive for RNZN Ships issued 25 June 1973.

176. New Zealand National Archives Directive for RNZN Ships issued 25 June 1973. HMAS *Supply*, Report of Proceedings, June 1973, p. 4.

177. *Navy News*, 20 July 1972, p. 2. See also EXN 0010 Mururoa Nuclear Tests 1973 – HMNZS *Otago* Mururoa Operation Report No. 1 sated 3 July 1973, pp 1-2. Note as the ships crossed the international date line Friday 29 June was repeated aboard ship.

178. *Navy News*, 20 July 1972, p. 2. See also EXN 0010 Mururoa Nuclear Tests 1973 – summary document prepared by RNZN.

179. New Zealand National Archives FZM 0002 Documents relating to Mururoa 1973 – Directive for RNZN Ships issued 25 June 1973.

180. New Zealand National Archives Directive for RNZN Ships issued 25 June 1973. HMAS *Supply* Report of Proceedings for June 1973, p. 4.

181. Wright, '30 Years Ago', p. 6.

182. New Zealand National Archives HMAS *Supply,* Report of Proceedings, June 1973, p. 4.

183. Hoadley, *New Zealand and France*, p. 54. See also New Zealand National Archives EXN 0010 Mururoa Nuclear Tests 1973 – HMNZS *Otago* Mururoa Operation Report No. 1, 3 July 1973, p. 2.

184. New Zealand National Archives Directive for RNZN Ships dated 25 June 1973, p. 3.

185. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 1, 3 July 1973, p. 4.

186. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 2 dated 10 July 1973, p. 1.

187. *Navy News*, 3 August 1973, p. 7.

188. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 2, 10 July 1973, p. 2.

189. HMNZS *Otago* Mururoa Operation Report No. 2, 10 July 1973, p. 2. Article from *The Press* dated 6 July 1973.

190. New Zealand National Archives Directive for RNZN Ships issued 25 June 1973. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973. *Otago* tracked the released balloons to a height of 18,300m.

191. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 2, 10 July 1973, p. 4.

192. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 3, 12 July 1973.

193. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 2, 10 July 1973, p. 6.

194. *Navy News*, 3 August 1973, p. 7. See also New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973 and Operation Report No. 3, 12 July 1973.

195. New Zealand National Archives EXN 0010 Mururoa Nuclear Tests 1973 – Article from *The Press*, 6 July 1973.

196. *Navy News*, 20 July 1972, p. 2. See also HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973. By 19 July, a permanent radphone link had been established between *Otago* and *Wellington* and with NZPA & NZBC.

197. Field, 'Silent Witness to Nuke Fallout', p. A6.

198. Field, 'Silent Witness to Nuke Fallout', p. A6.

199. Field, 'Silent Witness to Nuke Fallout', p. A6.

200. Wright, '30 Years Ago', p. 152.

201. Kitchin, 'Flying the Anti-Nuclear Testing Flag in the Pacific', p. E10.

202. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973, p. 8. *Otago* shut down to nuclear defence State 1 Condition Zulu and all hands at action stations.

203. New Zealand National Archives HMAS *Supply*, Report of Proceedings, July 1973, p. 5

204. New Zealand National Archives HMAS *Supply*, Report of Proceedings, July 1973, p. 5.

205. New Zealand National Archives EXN 0010 Mururoa Nuclear Tests 1973 HMNZS *Canterbury,* Report of Proceedings, July 1973.

206. New Zealand National Archives HMNZS *Canterbury,* Report of Proceedings, July 1973.

207. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973, p. 9. See also HMNZS *Canterbury,* Report of Proceedings, July 1973.

208. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973, p. 9.

209. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973, pp. 10, 15.

210. New Zealand National Archives FZM 0002 Documents relating to Mururoa 1973 HMNZS *Canterbury* Summary of Events, 14 August 1973, p. 2.

211. *Navy News*, 17 August 1973, p. 7. See also HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973 p. 11; and Report of Proceedings for HMNZS *Canterbury* July 1973. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973, p. 12. *Otago* arrived 2 August 1973.

212. New Zealand National Archives HMAS *Supply*, Report of Proceedings, July 1973, p. 5.

213. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973 - second page of summary attached to report.

214. New Zealand National Archives HMNZS *Otago* Mururoa Operation Report No. 4, 2 August 1973, p. 12.

215. This was the 32nd test since 1966.

216. Wright, '30 Years Ago', p. 7.

217. New Zealand National Archives HMNZS *Canterbury,* Report of Proceedings, July 1973.

218. New Zealand National Archives HMNZS *Canterbury,* Report of Proceedings, July 1973. See also Summary of Events for HMNZS *Canterbury*, 14 August 1973.

219. New Zealand National Archives HMAS *Supply*, Report of Proceedings, July 1973, p. 6.

220. *The Times*, 6 August 1973, p. 5. New Zealand National Archives EXN 0010 Mururoa Nuclear Tests 1973 Article from *New Zealand Herald* 3 August 1973.

221. New Zealand National Archives HMAS *Supply*, Report of Proceedings, August 1973, p. 1.

222. New Zealand National Archives HMNZS *Canterbury,* Report of Proceedings, August 1973. *Canterbury* arrived on 13 August 1973. See also Summary of Events for HMNZS *Canterbury*, 14 August 1973.

223. *The Times*, 6 August 1973 p. 5

224. New Zealand National Archives HMNZS *Canterbury*, Report of Proceedings, August 1973, p. 2.

225. New Zealand National Archives EXN 0010 Mururoa Nuclear Tests 1973 Summary produced by the RNZN p. 9.

226. New Zealand National Archives EXM 0027 Ministry of Defence Annual Report 1974, p. 11.

227. EXN 0010 Mururoa Nuclear Tests 1973 Article from *New Zealand Herald* 23 July 1973.

228. New Zealand National Archives EXM 0027 Ministry of Defence Annual Report 1974 – Annex A dated 7 March 1974.

229. New Zealand National Archives Ministry of Defence Annual Report 1974 – Annex A dated 7 March 1974.

230. Firth, *Nuclear Playground*, p. 11; and Kim Richard Nossal & Carolynn Vivian, *A Brief Madness: Australia and the Resumption of French Nuclear Testing*, Canberra Papers on Strategy and Defence No. 121, Strategic and Defence Studies Centre, Australian National University, Canberra, 1997, p. 6.

231. Nossal, *A Brief Madness*, p. 12.

232. New Zealand National Archives Agency ABFK Series 7607 Accession W5548 Box 163 3320/4/2 Part 2 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage Control – Tests 1989-1995. Cabinet Strategy Committee meeting minutes CSC (95) M 14/2 dated 2 May 1995.

233. New Zealand National Archives Agency ABFK Series 7607 Accession W5548 Box 163 3320/4/2 Part 2 Plans, Operations and Readiness – Nuclear, Biological, Chemical Warfare and Damage

Control – Tests 1989-1995. Memorandum from Minister of Foreign Affairs and Trade to Cabinet Strategy Committee, undated.

234. New Zealand National Archives Memorandum from Minister of Foreign Affairs and Trade to Cabinet Strategy Committee.

235. New Zealand National Archives Memorandum from Minister of Foreign Affairs and Trade to Cabinet Strategy Committee.

236. Hoadley, *New Zealand and France*, p. 105.

237. Hoadley, *New Zealand and France*, p. 107.

238. Hoadley, *New Zealand and France*, p. 111.

239. Hoadley, *New Zealand and France*, p. 110.

240. Hoadley, *New Zealand and France*, p. 110.

241. Hoadley, *New Zealand and France*, p. 110.

242. Nossal, A *Brief Madness*, pp. 7-8.

243. Nossal, A *Brief Madness*, p. 8.

244. Nossal, A *Brief Madness*, pp. 22-23.

245. Hoadley, *New Zealand and France*, p. 110.

246. Sarah Boyd, 'Parties Unite to Condemn French Tests', *The Evening Post*, 18 July 1995, p. 1.

247. Hoadley, *New Zealand and France*, pp. 112-113.

248. Hoadley, *New Zealand and France*, p. 113.

249. Hoadley, *New Zealand and France*, p. 105.

250. New Zealand National Archives RNZN Minute NA 3440-0015, 14 December 1995.

251. New Zealand National Archives HMNZS *Tui*, Report of Proceedings, August 1995, p. 3.

252. New Zealand National Archives EXO 0013 RNZN Minute NA 3440-0015, 14 December 1995.

253. New Zealand National Archives EXO 0013 RNZN Minute NA 3440-0015, 14 December 1995.

10 The Canadian Contribution to Coalition Operations in the Gulf 1990-2010

Richard Gimblett

The Candian Forces Maritime Command, recently renamed the Royal Canadian Navy (RCN), has been incredibly busy over the last two decades, but not at all in the fashion anticipated in the immediate aftermath of the fall of the Berlin Wall, and the onset of what has proven to be a new era of post-Cold War uncertainty. Nobody in November 1989 would have foreseen that I would be discussing this topic. Quite simply, the Persian Gulf was probably as far from any projected Canadian naval operating area as one might imagine. However, the first of our deployments to the Persian Gulf region was launched before the first anniversary of the fall of the Berlin Wall, and the region has come to be the focus of sustained deployments now spanning nearly two decades with no end in sight. Perhaps more interestingly, the evolving nature of Southwest Asia deployments over the past two decades has been an important development in the history of the modern Canadian navy in two major respects: first, from the point of view of their symbiotic relationship with the introduction of modern technologies and with changing concepts of operations; and second, with regard to the general shift from alliance to coalition features through the 1990s and into the 21st century. This paper contends that the gulf deployments were the catalyst for transforming Canadian fleet from a Cold War relic into one of the world's leading medium power navies. Indeed, a good case can be made that the RCN has led the true transformation of the Canadian Forces writ large through the 1990s. Additionally, going back to the origins of the first Gulf deployments in 1990, there are some interesting parallels to the navy's present predicament of grappling with the implications of reduced capacity while feeling the need for a new strategy.

The collapse of the Soviet Union as the nominal Cold War opponent had presented senior naval commanders cause for some concern. The RCN's reason for existing for the previous 40 years was gone, just as it was at its lowest post-World War II level. In accordance with the long-overdue fleet recapitalisation plan developed in the late 1980s, the 20-year-old Tribal class destroyers were about to be withdrawn for their mid life upgrade, coincident with the planned withdrawal of the mainstay of the fleet, the venerable steam-powered frigates built in the 1950s and 1960s, for sequential replacement by a new class of Canadian Patrol Frigates. Other projects for the replacement of the aging supply ships, conventional submarines and minesweeping vessels also were envisioned but not yet approved and funded. The fleet's capacity for operations would be severely diminished for the next five years, and already there were calls to scale back both programs as part of the anticipated 'peace dividend'.

Like the rest of the world, Canada was caught off guard by Saddam Hussein's invasion of Kuwait in August 1990. Most observers were further amazed that the major element of Canada's military response was the dispatch of a naval task group to the Persian Gulf, contrary to speculation that participation would be limited to a post-hostilities army peacekeeping force. If anything demonstrated how badly prepared the Canadian fleet had been to take on the presumed Soviet adversary, it was the deep anxiety then felt at going to war against an Iraq equipped largely with Soviet-style forces buttressed by the deadly French Mirage fighter and Exocet missile combination that had severely damaged USS *Stark* only a few years earlier.

However, the aging destroyer HMCS *Athabaskan*, the steam frigate HMCS *Terra Nova* and the supply ship HMCS *Protecteur* did sail, hastily upgraded with new weapon and command and control systems obtained from the patrol frigate and Tribal update projects. Nearly two decades later, it is sometimes hard to appreciate just how much that first Gulf deployment in the summer of 1990 turned the RCN's world upside down. Previously optimised for open ocean anti-submarine warfare in the subarctic waters of the north Atlantic and Pacific oceans, it now found itself facing a primarily airborne threat in confined tropical waters. Not only were major sensor and weapon systems inappropriate, but simple things such as the fitted seawater cooling for air conditioning plants and unfiltered air intakes were inadequate to hot, humid and dusty desert conditions, and quickly had to be completely re-engineered. But the sudden deployment also confirmed many fundamentals were sound, such as the intrinsic flexibility of general purpose warships, the basic operational competence of well-trained sailors and the organisational abilities of practiced staff officers, and the immense benefits of having invested in standardising major systems, especially communications, with the US Navy.

By the late 1980s, Canadian task group commanders had been regularly exercising the anti-submarine warfare commander function in major NATO exercises, this being facilitated by the introduction of fleet wide fits of powerful command and control tools such as ultra high frequency satellite communications and the associated global command and control system, maritime.[1] It was not a great leap therefore during the 1990-91 Gulf War, even though Canadian ships could not hold a place in the forward operating areas of the northern Gulf, when US Navy commanders needed someone to coordinate the activities of the many other 'lesser' navies in the southern Gulf, they delegated tactical control of the Coalition Logistics Force to the Canadian task group commander. Captain 'Dusty' Miller, was the only non-US Navy officer assigned a subordinate warfare commander role in that conflict.[2] The key was the special Canadian communications compatibility with the US Navy. It allowed the task group commander to pass messages and directions between US Navy commanders preoccupied with managing the very active war against Iraq, and the bulk of the Coalition members whose ships did not enjoy communication fits compatible with the US Navy. Where interaction with the Americans had always been an accepted part of broader alliance duty for all navies within NATO, the RCN

suddenly realised a much deeper meaning, what would soon become known as 'interoperability with the US Navy' was appreciated to be a fundamental operating tenet, and communications especially worth continued investment. At the same time, equally importantly, the nature of higher direction warfare, associated with coalition as opposed to alliance partners, was changing. Miller labelled it quite nicely at a Multinational Interception Force meeting when he suggested a redefinition of C2 from 'command and control' to 'cooperation and coordination'.[3]

The first Gulf deployment in the summer of 1990 marked a dramatic break from many of the presumptions guiding RCN employment, and indeed the whole of the Canadian Forces. For the first time in Canadian military history, participation in a major conflict was to be defined, not in terms of the land force contribution, but rather by the exclusion of it and instead by the contributions of the other services. Then, the bold tactical decision by the original task group commander, Commodore Ken Summers to station his ships in the 'Charlie' sectors of the central gulf, well within Iraqi air attack range and notwithstanding the limited self-defence capabilities of the ships, was an inspired declaration that ours was a fighting navy not afraid to go in harm's way. For another, one of the factors that leant Summers the confidence to take that step was the commitment of a squadron (and eventually a wing) of CF-18 Hornet fighters to fly top cover for the naval forces in the Gulf, the first expeditionary combat deployment in modern Canadian air force history, and conducted in concert with the US Navy rather than its traditional US Air Force partner. Then, when Summers was shifted ashore to take command of all the Canadian forces gathering in the Middle East, the establishment of his Bahrain base as the first true deployed joint headquarters in Canadian military history, and with a sailor in charge at that, heralded a true revolution in Canadian military affairs.

After the March 1991 ceasefire, the Canadian Government wished to maintain a presence in the region, but the state of the fleet transition limited the effort, as had been expected. However, the introduction to the fleet in the mid 1990s of the highly-capable *Halifax* class frigates suggested opportunities to renew deployments, and 1995 saw two ships dispatched on separate missions. The first, HMCS *Fredericton* in early 1995, was purely an effort to assist in the promotion of Canadian technology at various locations in the Gulf states. However, the second saw HMCS *Calgary* dispatched with the intention of operating with the USS *Abraham Lincoln* carrier battle group. Relations between the Canadian and US navies have always been close, but in pre-deployment meetings, it became clear to planners on both sides that strict interpretation of Congress mandated 'NOFORN' (no foreigner) regulations limiting access to high level communications, codes and equipment would seriously prohibit full utilisation of the capabilities of the new Canadian frigate. The intervention of the Commander of Maritime Command, Vice-Admiral Lynn Mason, with his counterpart Chief of Naval Operations Admiral Mike Boorda, USN, resolved the principles involved. Thus, *Calgary* came to be the first non-US Navy ship fitted with virtually unrestricted access to the US classified wide-area network known as the Secret

Internet Protocol Router Network (SIPRNET) managed by the US Department of Defense.[4] The deployment was a great success and became the model for future undertakings, amongst other things, having a shallower draught than most US Navy vessels, *Calgary* spent much of August and September patrolling off the mouth of the Shatt al-Arab just outside the Iraqi 12 nm territorial limit.[5] However, with the on going transition of the fleet, and the higher priority to provide frigates to the Adriatic for the NATO embargo of the former Yugoslavia, it would be two more years before another frigate could participate with the Multinational Interception Force.

Before continuing that story, it is necessary to go back in time to pick up another thread in our catalyst for transformation theme. In the fall of 1992, in response to Somalia's slide into failed state status, HMCS *Preserver* was dispatched to support the deployment of the Canadian Airborne Regiment in the distribution of humanitarian aid. In addition to providing the planned logistics support to Canadian land forces ashore, *Preserver* also found herself unexpectedly acting in the traditional replenishment at sea role, with an unusual array of partners, as various international actors arrived in the area without integral support, such as refuelling an Indian frigate and an Italian amphibious support ship. However, the deteriorating situation on the ground also resulted in a constantly changing mission, one aspect of which was the inability to find a safe initial location ashore for the mission commander's headquarters. The solution was to reconfigure the ship's operations room as an afloat joint headquarters, a measure obvious to any navy that operates amphibious forces, but to the supposedly unified Canadian forces (which in truth had never operated together as a 'joint' force in actual combat) this was a radical departure.[6] The success of at least this aspect of the ill-starred Somalia mission would be recalled a decade later when General Hillier embarked upon his recent so-called transformation of Canadian forces command and control. More immediately, it led within the navy to internalisation of the idea that the long overdue replacement of the replenishment ships should include the requirement that they be able to act as an afloat joint headquarters. Ironically, rather than speeding acceptance of the new tanker acquisition, an argument can be made that trying to define the level of jointness desired by the various services has delayed the acquisition of what is now called the or joint support ship. Nonetheless, the concept has been a powerful catalyst for the transformation of the Canadian Forces.

Returning to the main thread of the story, by 1997 the navy was ready to resume frigate deployments to the Gulf region. As had been established previously by *Calgary*'s 1995 mission, this ship (HMCS *Regina*, another west coast frigate) was also fitted with the full communications suite needed for SIPRNET access. However, by now it was recognised that the level of Canadian technical and communications interoperability with the US Navy was sufficiently high that the Canadian ship could replace an American vessel one-for-one in the order of battle.[7] As such, a new twist on this mission was that *Regina* undertook the full regime of training and work

ups and made the transit to the Gulf as part of the San Diego based US Navy Surface Action Group with which it was designated to operate. The success of that effort led to the practice of full integration into battle groups being regularised.

Although it was still only intended to send one ship a year, the continuing non-compliance of Saddam Hussein with United Nations (UN) inspection requirements soon led to a more forceful and sustained Canadian presence. A flurry of UN Security Council Resolutions in 1997-98 culminated in the coalition Operation DESERT THUNDER, for which the Canadian frigate assigned to the Standing Naval Force Atlantic was diverted to the gulf in support of the MIF. Even after that coalition drubbing, Saddam's compliance was short lived, so the Chretien government undertook to bolster its commitment to the MIF. What eventually became known in Canada as Operation AUGMENTATION saw the deployments of a succession of five frigates integrated in US Navy carrier battle groups and surface action groups in the three year 1998-2001 period. Saddam's intransigence towards the UN increased such that HMCS *Winnipeg* (the last frigate so deployed) had to perform several non-compliant boardings through the spring and summer of 2001. Significantly, for her last patrol in July 2001, *Winnipeg*'s commanding officer, Commander Kelly Williams, was designated the On-Scene Commander for the Northern Gulf, a first time for a coalition warship. Again, SIPRNET access, and more specifically full connectivity on what was known as the Coalition Wide Area Network, was the key to performing this major warfare responsibility.[8]

Another factor was the increasing persistence of the Canadian presence. The deployments through the 1990s worked to increase the familiarity of Canadian crews with the radically new satellite and computer based communications technologies. Overall, the effect was profound, creating the conditions under which the two occasions Canadian commodores took command of the Standing Naval Force Atlantic in 1995 and 1999, both times in the Adriatic against the former Yugoslavia, which were recognised as being especially effective. However, the Gulf deployments, for all of their individual effectiveness, being of such an irregular nature had failed to make a lasting impression on US Navy regional commanders, until, that is by 2000-01, when a steady succession of ships in theatre made Canada's presence an expected and accepted feature, resulting in *Winnipeg*'s recognition.

The decade of Gulf deployments had a deeper effect on the navy's psyche than just technical competence. Through the 1990s, the navy struggled to articulate a strategic vision for its purpose in the post-Cold War world. However, the publication in June 2001 of *Leadmark: The Navy's Strategy for 2020* was shaped in very large measure by a thorough exploration of the meaning of the Gulf deployments as an expression of sea power for a medium power such as Canada.[9]

The navy hardly had time to digest *Leadmark*, when in the aftermath of the 11 September 2001 terrorist attacks on the United States, NATO invoked Article 5 of its Charter and the UN Security Council passed a series of resolutions authorising

collective action against terrorists. Canada promptly began to implement its 'new' strategy. Many observers claimed that yet again 'the world had been turned upside down', but a more accurate assessment would be that 'there is very little new under the sun'. As has been Canada's practice in the past, the RCN once again was the first responder to a major crisis overseas, and within hours of the Chretien government approving what we called Operation APOLLO, the frigate with Standing Naval Force Atlantic once again was detached to join a US Navy carrier battle group in the Arabian Sea. Within the month, the west coast frigate that had been preparing to deploy under the latest iteration of AUGMENTATION sailed to join another carrier battle group. The main effort, however, was the dispatch of a three ship task group from Halifax, with a commodore embarked, which upon arrival in the Arabian Sea in November 2001 was assigned by the US Navy theatre naval commander to take responsibility for the close escort of the US Navy amphibious ready groups operating close inshore off Pakistan. This included the direct tactical control of a US Navy Aegis destroyers, a rare signal of US trust in an ally. However, the key word here is 'ally', this close escort was not far different from anything envisioned within the normal Canada-US operating concept, except that for the first time in decades the RCN actually was able to bring true capability to bear. However, operations in the Southwest Asia theatre would soon shift to take on the coalition features more typically associated with the region.

By January 2002, there were six Canadian warships in the region, one-third of the entire surface fleet, and their role in the expanding war against terrorism soon included the command of all other coalition warships as they arrived in the Arabian Sea, culminating eventually in the prestigious multinational task force command appointment of Combined Task Force (CTF) 151. After the high value unit close escort operations had wound down early in 2002, the focus of operations shifted to leadership interception operations to prevent the escape of Taliban and Al Qaeda from Afghanistan across the Arabian Sea into the Horn of Africa. This coincided with the arrival of naval forces from other coalition partners into the area. All of this effort was coordinated under the US Navy as part of Operation ENDURING FREEDOM, but in the winter of 2002-03, the shifting of US attention onto Iraq left many of those coalition partners uneasy, and a new task organisation command structure was developed to provide some arms length separation of ENDURING FREEDOM from Operation IRAQI FREEDOM. The solution was to elevate what had been a Canadian-led task group in the Gulf of Oman to full task force status, with a separate reporting chain to Naval Forces Central Command in Bahrain rather than going through an American admiral embarked in a US Navy carrier. Although that command role has been misinterpreted by politicians and academics who sometimes seem wilfully inclined not to understand national command and control structures, the case can be made that Commodore Roger Girouard's command of CTF 151 not only provided the Canadian Government a much fuller range of political options in managing its response to the crisis, but it quite probably was instrumental

in keeping the coalition together at a politically delicate time.[10] US Ambassador to Canada Paul Cellucci said it best when he observed, 'Canadian naval vessels, aircraft and personnel ... provide more support indirectly to this war in Iraq than most of the 46 countries that are fully supporting our efforts there.'[11]

After the last Canadian ship returned to Canada from Operation APOLLO in December 2003, the navy was supposed to take an 'operational pause' to recover from what had been its largest sustained operation since the Korean War. However, almost immediately, in January 2004, the frigate HMCS *Toronto* deployed back to the region and integrated with the USS *George Washington* carrier battle group. Operation ALTAIR was envisioned as a return to Operation AUGMENTATION single ship deployments, with one six month tour each year. However, even with RCN presence once again gapped, the capabilities of the ships and the prowess of the crews quickly re-established their reputation, and opportunities regularly arose for the ship captains to exercise what were known as 'pulse group commands' of small formations of multinational warships on focused operations. The most successful of these were the frigate HMCS *Ottawa*'s patrol in the Red Sea in early 2007, which added credibility to the coalition presence in the Bab El-Mandeb area near Yemen, and HMCS *Charlottetown*'s major counter-narcotics seizures in March of 2008 in the Gulf proper, which have convincingly established a direct link of that activity to funding of Al Qaeda.[12] Two factors have been critical to these successes, as always, the aforementioned high-level communications interoperability with US Navy forces, but now also the presence of Canadian liaison officers in the Naval Forces Central Command headquarters in Bahrain, who along with their Australian and British colleagues were taking on an increasingly important planning function within the coalition coordination hierarchy.

The increasing success of those single-ship deployments suggested a number of opportunities that could be exploited by the return of a full Canadian task group and the assumption of command of the coalition forces in the region. So it came to pass that Commodore Bob Davidson exercised command of CTF 150 for the months of June through September 2008, from his flagship HMCS *Iroquois*, with the frigate *Calgary* and supply ship *Protecteur* joining the other coalition forces. Several points from this theatre command stand out for further consideration. To begin, it is worth noting that this was the first consciously planned dispatch of a Canadian task group for a command role in the gulf region, all the other such deployments were crisis response events, even the rotations during Operation APOLLO. Second, the role of the coalition forces continues to evolve, with Commodore Davidson finding a shift in emphasis away from boarding everything that moves (largely because better intelligence techniques now allow more selective designation of vessels of interest), and instead a concentration on theatre security cooperation, that is, the more effective engagement of regional navies in order to establish an accepted maritime legal regime through various measures, including port visits to such places as Aqaba and Karachi (where Davidson respectively assumed command from his Pakistani predecessor and turned over to his Danish replacement).

However, being the summer monsoon season, with regional dhow traffic much reduced, the bulk of his command was rather uneventful, although the final week witnessed the flare up in Somali piracy to levels that finally attracted the interest of the world community. This was true for Canada's case as well, and the frigate HMCS *Ville de Québec* was diverted in September from its NATO mission in the Mediterranean to provide close escort for World Food Program aid deliveries from Kenya to Mogadishu, Somalia, through the autumn of 2008. *Ville de Québec* was the only *Halifax* class frigate that had not yet been sent to the region, so this deployment meant that every major surface ship in our fleet now has served in the Southwest Asia theatre of operations.

As Western navies prepared for a sustained presence in the region, in the first half of 2009, *Winnipeg* was part of the NATO Maritime Group that was supposed to deploy through the Southeast Asia region but remained off Somalia instead to deal with the continuing piracy problem. She was replaced a year later by *Fredericton*, which returned to Canada from her six-month deployment on 4 May 2010, the centenary of the navy's establishment. With the navy about to enter a phase of reduced operations not unlike that of the early 1990s, and with attention momentarily diverted to the Mediterranean theatre, it is not presently clear when any Canadian warships will return to the Gulf region proper.

By way of conclusion, before the summer of 1990, the Gulf region was not a typical theatre of operations for the RCN. Since then, Southwest Asian waters have become a 'home away from home' for the Canadian fleet. Every major warship currently in service has been there at least once, some several times, and it is hard to find a Canadian sailor not sporting a Southwest Asia service medal of some sort.

There have been five distinct phases to the deployments. First, there was the 1990-91 Gulf War, which pointed to both a new post-Cold War rationale for the fleet in UN sanctioned coalition operations, and the potential benefits of commanding such operations. Then there was a series of disconnected deployments, the highlight of which was the dispatch of the tanker *Preserver* to act as an afloat joint headquarters, leading ultimately to the incorporation of such a capability as a major element in the acquisition of the next generation supply ships. Third was the resumption of the UN sanction enforcement regime by the new Canadian Patrol Frigates equipped with high-level command and control systems that allowed their total integration with US Navy carrier and surface action groups. The fourth phase was also the most intense, the major post-11 September 2001 deployments known in Canada as Operation APOLLO, expanding from the responsibility for close defence of amphibious ready groups to culminate in command of CTF 151. Finally, there has been the continuing support to Operation ENDURING FREEDOM, largely with single frigate integrations but again witnessing command of the successor CTF 150.

Each of these phases brought its share of challenges to add to the operational experience and capability of the navy, their compounding success contingent upon some new technological development, mostly in modern communications, to maintain interoperability with the US Navy, and evolving concepts of operations. However, in the final analysis, long before 'transformation' became a buzzword amongst military forces, the exposure to networked operations through integration with US Navy carrier battle groups and the command of coalition fleets in the Southwest Asia theatre of operations have acted as a catalyst for the post-Cold War revitalisation of the Canadian navy.

Notes

1. Eric Grove, *Battle for the Fjords: NATO's Forward Maritime Strategy in Action*, Ian Allen, London, 1991.

2. Richard H Gimblett, 'MIF or MNF? The Dilemma of the "Lesser" Navies in the Gulf War Coalition', in Michael L Hadley, Rob Huebert & Fred Crickard (eds), *A Nation's Navy: In Quest of Canadian Naval Identity*, McGill-Queen's Press, Montreal-Kingston, 1996, pp. 190-204.

3. Jean Morin & Richard Gimblett, *Operation Friction: The Canadian Forces in the Persian Gulf, 1990-1991*, Dundurn, Toronto, 1997, p. 88.

4. Allan English, Richard Gimblett & Howard Coombs, *Networked Enabled Operations and transformation: Context and Canadian Contributions*, McGill-Queen's Press, Montreal-Kingston, 2007, pp. 46-47.

5. Department of National Defence Directorate of History & Heritage, *HMCS Calgary Annual Historical Report (1995)*, Canada.

6. RW Allen, 'Combine and Joint Operations in Somalia', in Peter Haydon & Ann Griffiths (eds), *Multinational Naval Forces*, Centre for Foreign Policy Studies, Dalhousie University, Halifax, 1996, pp. 203-229.

7. On the appreciation of the US Navy for the frigate deployments, see Jim Stavridis 'They Got Game', *US Naval Institute Proceedings*, vol. 125, no. 6, June 1999, pp. 51-54.

8. Department of National Defence Directorate of History & Heritage, *HMCS Winnipeg War Diary Op Augmentation (2001)*, Canada; and Department of National Defence Directorate of History & Heritage, *Annual Historical Report (2001)*, Canada.

9. Canadian Forces, *Leadmark: The Navy's Strategy for 2020*, Directorate of Maritime Strategy, Ottawa, <http://www.navy.forces.gc.ca/cms/10/10-a_eng.asp?id=302> (12 December 2011).

10. Janice Stein & Eugene Lang, *The Unexpected War: Canada in Kandahar*, Viking, Toronto, 2007, pp. 86-90.

11. Richard H Gimblett, *Operation Apollo: The Golden Age of the Canadian Navy in the War Against Terrorism*, Magic Light, Ottawa, 2004, p. 125.

12. See for example Department of National Defence Directorate of History & Heritage, *HMCS Ottawa Annual Historical Report (2007)*, Canada.

11 Keystone Doctrine Development in Canada and Australia

Aaron P Jackson

Since their inaugurations, most Commonwealth navies have maintained a plethora of written doctrine designed to guide their actions at the tactical level.[1] Traditionally this doctrine has been referred to as 'procedural manuals', 'fighting instructions' or 'fleet orders'.[2] Yet the development of higher level doctrine has been a far more recent phenomenon and above the tactical level. Commonwealth navies have traditionally been doctrine adverse. Providing a possible explanation for this situation, Michael Codner noted that during the early 1990s Royal Navy (RN) commanders worried that higher level doctrine would be 'inherently prescriptive' and that its publication would limit commanders' freedom of action.[3]

In several Commonwealth navies, this perception of doctrine designed to provide guidance above the tactical level has recently, if gradually, shifted. The result of this attitudinal shift has been the production by several Commonwealth navies of doctrine manuals designed to provide guidance at the operational and, even more significantly, at the military strategic level.[4] This paper is divided into four sections and discusses this shift using the Canadian and Australian navies as case studies to illustrate how and why this change has occurred.

First, doctrine is defined and the significance of keystone doctrine in particular is determined. Second, the conceptual foundations of keystone naval doctrine are described. Two case studies then detail respectively the development of keystone doctrine in the Canadian and Australian navies. These navies have been selected because both are medium-sized Commonwealth navies that undertake a multitude of the naval roles identified in the second section of the paper. Although structured chronologically, discussion within these case studies focuses on three areas: factors that were influential during the production of each keystone doctrine manual; the intended and actual effects each manual had following its release; and the significance of the content of each manual. In conclusion, this paper explicitly examines each of these three focal areas, in order to explain the nature, role and significance of the keystone doctrine manuals within Commonwealth navies.

Keystone Naval Doctrine

This paper applies the NATO definition of doctrine: that it is 'fundamental principles by which military forces guide their actions in support of objectives. It is authoritative but requires judgement in application'.[5] This paper also ascribes to the view that doctrine can be divided into categories based upon which 'level of conflict' the manual in question is designed to guide. Generally, it is accepted that there are three levels of conflict: tactical, where small scale engagements and battles are planned

and executed; operational, where campaigns are planned and executed with the aim of translating strategic goals into a series of tactical successes; and strategic, where countries develop overarching defence strategies and policies, and militaries develop military strategic plans to fulfil their role(s) within national strategy.[6]

Given the hierarchical nature of militaries, it is unsurprising that they organise their doctrine into hierarchies, wherein discussion within lower manuals in the hierarchy has to conform to discussion in higher manuals. In most Commonwealth navies, military-strategic doctrine has been placed at the top of the hierarchy and tactical doctrine at the bottom. The doctrine manual at the pinnacle of the hierarchy is usually referred to as 'keystone' doctrine. As stated within the first edition of the RAN's *Australian Maritime Doctrine*, keystone doctrine 'stands at the summit of naval doctrinal effort'.[7] Furthermore:

> It not only serves to educate and motivate personnel and improve their understanding of the roles and functions of their services, but can be used to inform those within government and the wider community of the ways in which military force can be applied by the nation in exercising its national power.[8]

Due to the scope and significance of keystone doctrine manuals, they constitute the focus of the analysis within this paper.

Conceptual Foundations

When compared to the volume of land focused strategic theories that have been advanced over the years, maritime strategic theories are relatively sparse. The first written theories of modern maritime strategy were not published until the latter part of the 19th century and the evolution of maritime strategic theory is largely the story of a small group of prominent theorists.[9] Of these theories, several are worthy of brief discussion because they have been prominently included in the keystone doctrine of Commonwealth navies.

Key among earlier conceptual developments are 'command of the sea', 'sea control', 'sea denial' and 'power projection'. The first concept, command of the sea, exists where one state (or a group of allied states) has naval superiority to the extent that an opponent simply cannot use the sea at all.[10] Generally, it is accepted that command of the sea is brought about by the total destruction of the enemy's naval forces, although as *Australian Maritime Doctrine* noted, command of the sea is difficult to achieve in the modern environment owing to asymmetric threats and technology such as mines, torpedoes, aircraft, submarines and long range missiles.[11]

Because of this situation, sea control, sea denial and power projection are arguably more useful concepts in the contemporary world. The difference between sea control and sea denial is subtle. Sea control is obtained when a state has a monopoly over

the use of an area of the sea for a period of time, whereas sea denial is obtained by denying an enemy state use of an area of the sea for a period of time. Power projection refers to the ability of navies to influence events ashore through the application of combat power, either directly (such as by naval gunfire directed against targets ashore), or through the amphibious insertion of land forces.[12]

Ken Booth, whose discussion of the roles of navies is fundamental in explaining the spectrum of activities they undertake, perhaps best explains how each of these concepts fits within the scope of activities undertaken by modern navies.[13] He developed a triangular model that divides naval tasks into three categories: diplomatic, policing and military, centred on the use of the sea.

A further breakdown is undertaken within each of the categories and Booth offers a detailed analysis of the many options navies offer to strategic policy makers. In their diplomatic role, navies are a useful foreign policy tool and the presence of warships can be used to reassure or reinforce allied governments, deter potential aggressors, manipulate the decisions of foreign governments, or simply enhance a state's prestige. In their constabulary role, navies contribute to the protection of national sovereignty, assist in state-building and peacekeeping missions, and are vital in enforcing state, maritime and international laws. In their military capacity, navies provide states with military power in the 'traditional' sense, acting as a vital component of national military strength.

Case Study 1: The Canadian Navy

Throughout the Cold War, the Canadian navy's focus was primarily on its military role. This focus was a direct result of the navy's designated role within NATO as an anti-submarine warfare (ASW) specialist navy, although it has a legacy dating to World War II, when the Royal Canadian Navy (RCN) was involved in the protection of transatlantic shipping convoys from attack by German submarines. The RCN's ASW capabilities were maintained during the early years of the Cold War, although it was not until the late 1950s that ASW began to emerge as a primary role.[14]

This shift in focus primarily occurred for two reasons. The first was the changing nature of the threat posed by the Soviet Navy. Under the leadership of Admiral Sergei Gorshkov, its Commander in Chief from 1955 to 1985, Soviet submarine production increased dramatically. As Tom Frame observed:

> the Soviet Navy was not a balanced fleet like the US Navy ... It boasted a massive nuclear and conventional submarine capability. Between 1949 and 1972, the Soviet Navy developed 24 new classes of submarine ... By 1980 the Soviet Union deployed 280 nuclear and nuclear ballistic missile carrying submarines. Three-quarters of the Soviet submarine fleet was nuclear powered. But the Soviet Navy lacked aircraft carriers, while the surface fleet suffered from vastly deficient air protection. The size and potency of the submarine fleet

was, however, sufficient to cause a reorientation of force structures in most Western navies.[15]

For the Canadian navy, this reorientation accelerated during the late 1960s due to the unification of the Canadian Forces.[16] This was largely because of the acquisition 'carrot' the (then) Defence Minister, Paul Hellyer, dangled in front of the RCN in an attempt to convince the Admiralty to accept unification; most of the acquisitions offered were designed primarily for ASW.[17]

The second factor influencing the decision to reorientate the Canadian navy's role to ASW was budget constraints. Since the navy did not have the resources to make a substantial contribution to NATO defence of the Atlantic across the spectrum of maritime warfare, the provision of a highly-specialised ASW force enabled the Canadian navy to provide a worthwhile contribution in at least one area.[18] It also, coincidently, ensured the navy's primary focus remained on the military role identified by Booth.

In the early 1990s, the collapse of the Soviet Union and subsequent end of the Cold War triggered a period of strategic uncertainty for the Canadian navy, along with bringing its specialist ASW role into question. Cuts to the defence budget, particularly in 1989, led to the cancellation of many modernisation and acquisition programs that had been approved for the navy as recently as 1987 in that year's Defence White Paper, *Challenge and Commitment: A Defence Policy for Canada*.[19] Furthermore, the collapse of the Soviet Union initially left the navy without any strategic policy guidance, although it has since been observed that its fleet structure ensured it was flexible enough to adapt to the post-Cold War operational environment.[20] Despite a declaration that naval assets would be more evenly distributed between the Atlantic and Pacific coasts, a Defence Policy Statement, released in 1992, did little to alleviate the uncertainty this situation created.[21]

Shortly afterwards, the growing number of peacekeeping operations, which had increased from 13 in 1988 to 18 in 1992, led some to question why Canada needed to prepare for traditional warfighting at all.[22] Furthermore, the expression of such views had on occasion been accompanied by the calling into question of the need for naval forces all together. It was against this unfavourable backdrop that the Canadian navy released a keystone doctrine manual, *The Naval Vision: Charting the Course for Canada's Maritime Forces,* in May 1994.[23]

The catalyst for the production of this doctrine manual was the election of the Chrétien government in late 1993. When Chrétien came to power, his government did not have an established defence policy, beyond the desire to cut costs. Shortly after his election, Chrétien began a strategic policy review process, which eventually culminated in 1994 with the release of *1994 White Paper on Defence*.[24] As part of this review, each of the three Services was asked to express its views about the future direction Canadian strategic policy should take. In light of the unfavourable nature of the prevailing political environment, the navy acted to both justify its existence and

to shape the review's outcome in its favour. *The Naval Vision* constituted a crucial part of this effort. As one retired Canadian navy commodore noted, *The Naval Vision* was intended to explain the RCN's role to the public 'at a grade twelve level'. It was squarely, and intentionally focused on winning over to the navy's cause the members of the Special Committee of the Senate and House of Commons that had been charged with undertaking the Chrétien government's strategic policy review.[25]

Despite this intent, production of what eventually became *The Naval Vision* was already underway prior to the 1993 election. At the time of the election, however, the requirement for a keystone doctrine manual had not yet been identified and the project's intended outcome was merely to update the navy's *Maritime Development Plan*, an internal planning document that had been circulated from time to time, most recently during the 1980s. As the navy responded to the Chrétien government's election and subsequent strategic policy review, the need for a much wider ranging, military strategic level publication was identified and the project was expanded, bringing about production of *The Naval Vision*.[26]

The release of *The Naval Vision* was accompanied by the emergence of a uniquely Canadian trend, which has been characterised by the couching of keystone doctrine manuals as 'strategy' or 'reference documents', rather than as 'doctrine'. This is especially true of the navy's first two keystone doctrine manuals, and in their case one of the reasons for this is their early release dates compared to other navies and other branches of the Canadian Forces, during the late-1980s and early-to-mid-1990s, doctrine above the tactical level was still stigmatised as dogma by many Canadian naval officers.[27] Avoiding the term 'doctrine' in turn avoided much of the stigma that the use of the term would have attracted.

Regardless of their terminology, the RCN's keystone publications are clearly doctrinal. This is confirmed by their content, which has always contained a discussion of the 'fundamental principles' that guided the navy at the time of their release, and they always established a conceptual direction for the navy, within the framework of a national strategy. This is significant because both of these factors align with the definition of doctrine since established within Canadian joint doctrine, as well as with the definition of doctrine used within this paper. Furthermore, each of the RCN's keystone publications discussed here, including *The Naval Vision*, have been regarded as doctrine by several Canadian navy officers, and have been subsequently referred to as such.[28]

Overall, the impact of *The Naval Vision* on strategic policy formulation is questionable. Although it has been asserted that the publication of the manual led to the navy 'winning' the inter-Service funding battle for the few years after its release, since the army and air force had no similar 'vision' or mission statement to fall back on, it is not directly mentioned in *1994 White Paper on Defence*.[29] However, there are parts of *1994 White Paper on Defence* that align with *The Naval Vision*; among these a brief

discussion of 'operational maritime forces' is particularly notable.[30] Furthermore, the few naval acquisitions approved within *1994 White Paper on Defence* all align with discussion in the third section of *The Naval Vision*, although whether there is a direct connection between the two documents or whether the alignment is merely a coincidence remains unclear. Regardless of its impact on strategic policy, *The Naval Vision* remains an easy to read guide to the RCN's position and institutional strategy during the early 1990s.

Despite the limited respite signalled by the release of *1994 White Paper on Defence*, the Canadian political climate during the mid-1990s continued to be characterised by a high degree of strategic uncertainty. Furthermore, several years of post-Cold War defence spending cuts meant that no major capital purchases were approved for the navy until nearly a decade after the conclusion of the Cold War.[31] Because of this situation, the development of the navy's second keystone doctrine manual, *Adjusting Course: A Naval Strategy for Canada*, released in April 1997, was closely linked to the navy's attempt to generate renewed funding for its acquisitions program.[32] In particular, the navy was attempting to generate political support for the purchase of a new submarine fleet to replace its *Oberon* class submarines, which had been purchased during the 1960s and had become obsolete by the early 1990s.[33]

Initial attempts to find a replacement for the *Oberon* class had failed following the 1987 decision to acquire nuclear rather than diesel-electric submarines. A few years after the release of *Challenge and Commitment*, which had announced the nuclear submarine purchase, it was determined that the nuclear option was too costly and the project fell by the wayside entirely.[34] Following the election of the Chrétien government in 1993, renewed navy lobbying reopened the door for the possible acquisition of a diesel-electric replacement for the *Oberon* class.[35] Importantly, *1994 White Paper on Defence* endorsed the acquisition on conditional terms.[36] Despite this, the project soon stalled again and as a result, it took the RCN another four years of unduly protracted but ultimately successful lobbying before the acquisition of a replacement submarine fleet was finalised in April 1998.

The eventual purchase of the *Upholder* class diesel-electric submarines from Britain was a hard-won funding victory for the navy.[37] As Peter Haydon observed about post-*1994 White Paper on Defence* developments, 'Much of the delay was a simple function of the need for submarines not having enough political support in Canada despite the new defence policy decision'.[38] Michael Craven has since expanded on this observation, noting 'From 1994 until the summer of 1997, significant departmental effort was expended educating Cabinet and Canadians as to the rationale for replacement submarines'. As part of this effort, 'A series of documents drafted for government consideration stressed common themes' about the relevance and utility of submarines.[39] *Adjusting Course* constitutes one of these documents and

a major intention underlying its publication was the provision of a comprehensive justification of the navy's roles, in support of its acquisition programs.

In light of this situation, it is unsurprising that *Adjusting Course* tends to read in places as though it were a 39-page justification for the *Upholder* purchase. This is most obvious in the conclusion, where it bluntly stated: 'In the near term, the most serious problem is represented by the aging submarine force. Submarines provide a unique capability that cannot be adequately replaced by other platforms'.[40] While the exact extent to which *Adjusting Course* was responsible for the eventual purchase of the *Upholder* class cannot be determined, it is likely that the doctrine at least formed part of the navy's overall strategy to bring about the purchase.

Beyond this objective, *Adjusting Course* also undertook a more general discussion about the links between navies and foreign policy. This set the tone for subsequent keystone doctrine manuals because it included a discussion of the concepts of sea control and sea denial. It also touched on the roles of navies developed by Booth, discussing the navy's role in protecting Canada's sovereignty, the conduct of naval diplomacy and the utility of naval power projection, although Booth was not credited.[41] The extent to which the content of *Adjusting Course* was influenced by the keystone doctrine of other navies is unclear. Although RN doctrine was referred to in the glossary of *Adjusting Course*, it was not referred to within the text itself.

Just as *The Naval Vision* was considered by some to be overly simplistic, others have asserted that *Adjusting Course* swung the pendulum too far the other way. Indeed, it attracted an unusually high level of public criticism, particularly from British commentators. For example, when contrasting it with the RN's 1995 keystone doctrine manual, *BR 1806: Fundamentals of British Maritime Doctrine*, one RN officer observed about the Canadian publication, 'There are shades of doctrine here, though at a much less "fundamental" level than our own BR 1806'.[42]

In a particularly scathing critique, Eric Grove took this argument one step further by stating:

> This is a rather curious publication in many ways. It seems to be an in-house Naval paper but it is clearly intended to achieve the laudable objective of putting the Canadian 'naval case' to a wider audience. In this it succeeds, but only up to a point. Its good intentions are marred somewhat by some needless errors of analysis that weaken it significantly and give the document the feel of a slightly below-average postgraduate thesis.[43]

This critique prompted a rebuttal by Canadian scholar Peter Haydon, who asserted that:

> In reading Grove's full commentary one could get the impression that his rather condescending criticism of *Adjusting Course* is merely a

form of scolding the 'colonials' for not following mother's advice. He really seems concerned that the Canadian Navy had the audacity to engage in independent naval thought.[44]

Importantly, Haydon's rebuttal indicates that allied naval doctrine, British in particular, had little influence during the development of *Adjusting Course.*

Despite the limited academic debate it generated, there is little evidence that *Adjusting Course* was an effective tool for generating widespread public support for the RCN. The role it played as part of the navy's case in support of the *Upholder* purchase aside, *Adjusting Course* appears to have been of only limited utility to the navy, particularly once the *Upholder* purchase had finally been made. Furthermore, some felt that *Adjusting Course* had failed to adequately explain the reason for Canadian navy's existence to the public. As Haydon observed:

> At the moment it [*Adjusting Course*] presents a good argument but is not a complete strategy because it does not adequately answer the question: 'What function does the navy perform which obligates Canadian society to assume responsibility for its maintenance?' Moreover, *Adjusting Course* is a strategic orphan because it is not tied to an overarching national strategic vision free of the constraints of today's short-term political imperatives and locked tightly on the future of this country in the longer term.[45]

In June 1998, the release of *Shaping the Future of the Canadian Forces: A Strategy for 2020*, referred to simply as *Strategy 2020*, provided the first such 'strategic vision' since *1994 White Paper on Defence.*[46] Following the release of *Strategy 2020*, Vice Admiral Maddison, then Chief of the Maritime Staff, ordered the Directorate of Maritime Strategy to begin work on a new publication that was designed to fit within the vision established within *Strategy 2020*. The new publication, *Leadmark: The Navy's Strategy for 2020*, was released in June 2001.

The link to *Strategy 2020* was evident throughout *Leadmark*, the foreword to which noted that '*Leadmark* is a critical link to the capability-based planning framework set in place by *Strategy 2020*'.[47] Others have also noted the influence *Strategy 2020* had during the development of *Leadmark*, which was substantially broader and more considered than the development of its predecessors. As the manual's initial author, Richard Gimblett, recalled, at the outset of the development of *Leadmark*:

> We had a general concept of what the naval strategy [*Leadmark*] should look like – basically, look a lot like *Strategy 2020* … something of about 20 to 25 page synopsis of where the navy was going to go over the next 20 years.

However, once work on the manual began, the scope of the task rapidly expanded. The result was that '*Leadmark* was suddenly becoming more than a one-man, twenty-page writing assignment … we started developing the idea of a team concept'.[48]

It was at this point in its development that *Leadmark* began to move away from being an organisational strategy. Rather, it developed into a comprehensive keystone doctrine manual. Eventually, the core writing team was expanded to include three mid-level and one senior naval officer and a civilian academic.[49] Early drafts were widely circulated both within and outside of the navy, and development was further enhanced by consultation with related academic conference papers and commentaries.[50] In addition, *Leadmark* was influenced by allied keystone doctrine manuals, particularly those produced by the United States and Royal navies, and by the operational experience of members of its writing team.[51] However, *Strategy 2020* remained the key catalyst underlying the production of *Leadmark* and its influence was particularly prominent.

Following a discussion about its relationship to strategic policy and the force development process, *Leadmark* comprehensively elaborated the roles of navies. In undertaking this elaboration, it is noteworthy that *Leadmark* drew heavily on Booth's model. It also drew on the work of several other prominent maritime strategic theorists, and provided definitions of sea control, sea denial and maritime power projection, amongst other concepts.[52] In its final part, *Leadmark* established a naval strategy for 2020. Although the strategy was deliberately broad and succinct, totalling only two paragraphs, it nonetheless served to link the document to its original intent, which was to develop a naval strategy that aligned with *Strategy 2020*.[53] In this sense, *Leadmark* was a success, although importantly its doctrinal style ensured that it constituted a well balanced military strategic treatise that was more broadly relevant than a strategy alone could have been.

Indeed, *Leadmark* was far more effective than its predecessors in achieving the goal of promoting awareness of the Canadian navy's roles and in establishing a military strategy for the navy. This is because it avoided the pitfalls of both of its predecessors, it was comprehensive and easy to understand but not overly simplistic, and was more widely and prominently distributed. As a result, *Leadmark* was highly successful in making an impact in the public realm, even though it attracted the occasional criticism.[54] As one retired Canadian lieutenant commander recalled, *Leadmark* temporarily gave the navy the edge it required to secure funding for its priorities ahead of the army and air force, precisely because at the time *Leadmark* was released neither of the other services had an equivalent 'glossy publication you could give to a politician'.[55]

The maritime strategy *Leadmark* established was also highly versatile. As its release date was only three months prior to the 11 September 2001 terrorist attacks against New York and Washington DC, there was some concern in the wake of these attacks that subsequent events had rendered *Leadmark* prematurely redundant.

This concern was unfounded. Following the terrorist attacks of 11 September 2001, the RCN commenced Operation APOLLO in the Arabian Sea and Persian Gulf, which resulted in the highest operational tempo in its recent history. As Gimblett later wrote, 'the experience of operation Apollo has been to validate the strategy described in *Leadmark*'.[56] Nonetheless, some within the navy still felt the need to demonstrate that they were responding proactively to the events of 11 September 2001.[57] The result was the development of what was described as 'an additional chapter' to *Leadmark*.[58] *Securing Canada's Ocean Frontiers: Charting the Course from Leadmark* was released in May 2005.[59]

As *Securing Canada's Ocean Frontiers* was released shortly after the publication of a report on defence policy that constituted part of the Martin government's 2005 *International Policy Statement*.[60] The opportunity was taken to incorporate into *Securing Canada's Ocean Frontiers* a brief discussion of the national strategy established in the *International Policy Statement*.[61] While this gave *Securing Canada's Ocean Frontiers* some additional depth, overall it remained little more than a validation of *Leadmark*. In its introduction, it noted, '[j]ust as the Canadian experience of Operation Apollo served to validate many of *Leadmark*'s strategic tenets, the Global War on Terrorism also confirmed many of its predictions'.[62]

Like *The Naval Vision* and *Adjusting Course*, the overall impact of *Securing Canada's Ocean Frontiers* has been questionable. In the words of one Canadian navy officer:

> the doc ... has never really developed traction. Others on the naval staff tell me they keep returning to LM [*Leadmark*] for any substantiation required in development of other staff work, or in the academic community to explain some naval concept'.[63]

This is unlikely to be the case for very much longer, however, as the Canadian navy will shortly release its fifth doctrine manual. According to one of its authors, the new manual:

> is at heart a strategic communications document, rather than a force development document, with Canada's parliamentarians intended as the primary audience. It will be a much shorter document than its predecessors.[64]

For this reason, the new doctrine manual may have more in common with *The Naval Vision* and *Adjusting Course* than it will with *Leadmark*.

Although at the time of writing of this paper a draft of the new doctrine manual is not yet publically available, it is known that the new manual will espouse similar themes to those discussed in a speech delivered in March 2010 by Chief of the Maritime Staff, Vice Admiral Dean McFadden.[65] In this speech, McFadden advocated a quintessentially global approach to Canadian maritime strategy,

asserting that 'the strategic organizing principle for the application of Canadian seapower in this maritime century is to defend the global system both at and from the sea'. Furthermore:

> The Government charges the Canadian Forces to defend Canada, to defend North America and to contribute to international peace and security. The navy has vital roles to play in each of these enduring pillars of defence policy. Defending the global system, both at home and abroad, is fundamental to all three.[66]

It will be interesting to see the extent to which this global approach to Canada's maritime strategy will be reflected in the Canadian navy's forthcoming keystone doctrine manual.

Case Study 2: The Royal Australian Navy

The RAN released its own keystone doctrine manual, *Australian Maritime Doctrine*, in October 2000. The timing of the release of this manual was due to a combination of factors, both internal and external to the RAN. Internally, members of the RAN Maritime Studies Program were interested in writing a keystone doctrine manual as early as 1993; however, they failed to generate support for the idea for several reasons. These varied over time and included objections from senior officers because doctrine would be 'too prescriptive', and the frequent turnover of Maritime Studies Program members, especially the Director General. It was only during the last few years of the 1990s that this situation began to change.[67]

Furthermore, attempts by members of the Maritime Studies Program to gain support for the production of a keystone doctrine manual were also likely to have been indirectly influenced by external events. Following the release of Australia's 1987 Defence White Paper, *The Defence of Australia 1987*, the RAN had maintained a position of priority in Australian strategic policy for most of the 1990s. *The Defence of Australia 1987*, which had accorded priority to the destruction of enemy forces in the 'sea and air gap' to Australia's north, had given 'high priority to maritime (naval and air) forces capable of preventing an adversary from substantial operations in that area'.[68] Despite the prevailing environment being characterised by funding constraints, the fleet was to be expanded from 12 to 16 or 17 major surface ships and the purchase of 6 submarines was also approved.

Yet *The Defence of Australia 1987* did not give specific details about the nature or origin of any potential threat to Australia. As a result, the RAN was compelled to prepare for several contingencies. A key concern from the mid 1970s to the late 1980s was increasing Soviet naval activity in both the Pacific and Indian oceans.[69] Beginning in the mid 1980s, Indian naval expansion and modernisation was also viewed by some within the RAN as a significant additional security challenge, although fears eventually dissipated.[70]

In addition to these 'traditional' naval threats, the RAN participated in several international exercises that focused on warfighting scenarios. Most prominently these included exercises held under the auspices of the Five Power Defence Arrangements and Exercise RIMPAC, hosted biennially by the US Navy.[71] The overall result of these exercises, combined with the need to implement the naval role prescribed by Australian national strategy, was a major focus within the RAN on the military role of navies.

The 1990s brought about a gradual balancing of RAN planning focus, beginning after the 1990-91 Gulf War. As Frame noted:

> As the RAN would be contributing to the enforcement of trade sanctions against Iraq for the next decade, the 1990s saw a shift in focus from warfighting to a range of 'peace operations'.[72]

The changing training emphasis was accompanied by growing budgetary constraints, which further curtailed the navy's ability to train for its traditional warfighting role, since less funding was available to conduct exercises.[73] This is not the say that the RAN ceased to prepare for warfighting altogether. Rather, during the early 1990s its focus shifted towards a more balanced mix of training for the military, diplomatic and policing roles identified by Booth.

Contrary to the Canadian navy, the RAN did not suffer from a lack of strategic guidance during the early to mid 1990s. If anything, the update to Australia's national strategy espoused within a *Force Structure Review*, published in 1991, was useful to the RAN as it established that the Australian Defence Force may have been required to provide military assistance to countries in the South Pacific if required.[74] This had the effect of clarifying the range of tasks the navy may have potentially been called upon to perform, enabling it to train accordingly. Furthermore, defence of the sea and air gap to Australia's north remained the primary focus of Australian national strategy under the Hawke and Keating governments, ensuring that the RAN maintained a position of prominence within strategic policy.[75]

By the late 1990s, however, the government's funding priorities had begun to shift away from the navy, a shift that greatly accelerated following the defence force's deployment to East Timor in 1999. Over the next few years, the RAN found itself rapidly reprioritised within Australian strategic policy. The changing situation, which further shifted following the Howard government's initiation of a Defence Review in June 2000, led many within the navy to feel increasing pressure to justify the organisation's activities to the Australian public.[76] As a result, receptiveness to the production of a keystone doctrine manual rapidly grew, and many of the objections and barriers faced by members of the Maritime Studies Program during the 1990s seem to have disappeared.

Related to these changes in attitude were changes to key appointments, including a new Director General of the Maritime Studies Program, (then) Captain James Goldrick, RAN, appointed in January 1999, and a new Chief of Navy, Vice Admiral David Shackleton, RAN, appointed in July 1999. Although Shackleton's predecessor, Vice Admiral Chalmers, RAN, had initiated the production of a keystone doctrine manual in early 1999, Shackleton proved to be highly supportive. The primary author, however, was Captain Goldrick. Due to an emergency posting back to sea, little of the actual writing was undertaken until early 2000, although the document was produced quickly after this. Once Goldrick had completed a draft, it was widely circulated for comment, including to overseas experts. Following a partial redrafting to incorporate the feedback Goldrick had received, the doctrine was then approved by Shackleton prior to its release in October 2000.[77] Interestingly, *Australian Maritime Doctrine* contained a short 'note on sources' that had been referred to during its development.[78] As had been the case with *Leadmark*, the content of *Australian Maritime Doctrine* was influenced by RN doctrine.[79] It was also influenced by a 1997 Royal New Zealand Navy doctrine manual, as well as the works of several maritime strategic theorists and by US Navy doctrine, although the latter's influence was 'less direct'.[80]

The content of *Australian Maritime Doctrine* was well developed. Divided into 12 chapters, it sought to explain 'how the Royal Australian Navy thinks about, prepares for and operates in peace and conflict'.[81] This it did quite well, examining the concept of 'doctrine' itself, Australia's maritime environment, the nature of armed conflict and ongoing themes in Australian strategic policy. Cleverly, it focused on trends over time and avoided discussing specific strategic policy documents, something that resulted in its ongoing relevance over time.[82] It then provided a detailed discussion of maritime strategic and operational concepts, including sea control, sea denial and command of the sea. In this discussion, it drew heavily on many prominent maritime strategic theorists, including providing an overview of maritime operations that drew heavily on the Booth model, and Eric Grove's subsequent refinements.[83]

In its latter chapters, *Australian Maritime Doctrine* offered a justification for the navy's fleet structure, explaining the importance of maritime logistics and providing a brief overview of the role of the RAN's many types of ships.[84] This discussion appears to have been dually motivated by the desire to explain the navy's activities to the public and by the desire to justify its funding requirements to government, although this latter motivation is not directly mentioned anywhere in the doctrine; rather, it is the impression one gets from reading the text.

Overall, *Australian Maritime Doctrine* was well received both within the Australian naval community and by the public, and in March 2005 a supplemental publication, *The Navy Contribution to Australian Maritime Operations*, was released.[85] *The Navy Contribution to Australian Maritime Operations* was developed as a supplement to

expand on discussion in the latter part of *Australian Maritime Doctrine*, especially in chapters 9 and 10. As Vice Admiral Chris Ritchie, RAN, noted in the foreword to *The Navy Contribution to Australian Maritime Operations*:

> Where *Australian Maritime Doctrine* focuses on the strategic rationale for and components of maritime operations, the purpose of this volume is to examine in greater detail the operational capabilities, and indeed limitations, of our Navy.[86]

This intent was made even clearer in the introduction, which stated: '[*The Navy Contribution to Australian Maritime Operations*] could be considered to address the general questions: *What is each principal element of the RAN, and how does each operate?*'[87]

Written as a public reference the navy could refer to when answering questions about the nature of operations and the utility of its various platforms, *The Navy Contribution to Australian Maritime Operations* is intended for both navy internal use as doctrine and also to provide a platform for public relations and international engagement. As such, it is less 'doctrinal' *per se* than the conceptually focused *Australian Maritime Doctrine*. Each chapter of *The Navy Contribution to Australian Maritime Operations* was written by subject matter specialists from within the relevant area of the navy, under the direction of Captain Richard McMillan, RAN, then Director of the Sea Power Centre – Australia, who was also the lead writer. Because of this, the publication of *The Navy Contribution to Australian Maritime Operations* occurred following an extensive review process to ensure consistency between chapters.[88]

The content of *The Navy Contribution to Australian Maritime Operations* is divided into chapters that each discuss a particular capability (such as command and control or personnel) or the role of a particular type of naval platform (such as patrol boats, submarines, surface combatants and naval aviation). Of note, discussion in the introduction briefly addressed Australian strategic policy developments since 2000, although it is clear from this discussion that *The Navy Contribution to Australian Maritime Operations* was influenced more by existing maritime strategic theory than by developments in Australian national strategy. As such, a brief overview of Australia's 2000 Defence White Paper, *Defence 2000: Our Future Defence Force*, was quickly passed over, with discussion moving on to summarise the roles of navies as established by Booth, before tying these in with recently developed operational concepts such as network-centric warfare and effects based operations.[89]

Overall, *The Navy Contribution to Australian Maritime Operations* succinctly answered the questions it posed for itself, and at the time of writing of this paper, it continues to provide the RAN with a useful public relations tool. Because of its focus, however, its utility as a military strategic or operational level doctrine manual is severely limited, and *Australian Maritime Doctrine* continues to constitute the navy's keystone doctrine

manual. The ongoing applicability of the first edition of *Australian Maritime Doctrine* over a longer timeframe was therefore convenient for the navy, which did not commence production of an updated edition until early 2008.[90] This was largely due to operational tempo, and plans to revise *Australian Maritime Doctrine* earlier fell through because the RAN was unable to allocate an officer to its doctrine writing position.[91]

The second edition of *Australian Maritime Doctrine*, published in 2010, was developed as an update, rather than a replacement for, the first edition. Although this can be rightly viewed as a testament to the quality and durability of the first edition, there were nonetheless a few key differences between the two editions.[92]

The first major difference was the prominence accorded to the discussion of human resources, which was moved from Chapter 8 of the first edition to Chapter 2 of the second. This was due to the launch in 2009 of the Chief of Navy's New Generation Navy initiative, which had significant structural, cultural and leadership implications.[93] It also increased the prominence of the navy's focus on human resource management, which led to suggestions that the chapter of *Australian Maritime Doctrine* that addressed this subject should be moved to the front of the manual.[94] The second major difference was the inclusion of a new chapter entitled 'the legal context', which detailed the relationship between naval operations and international law.[95] Finally, a chapter addressing the spectrum of operations was added, replacing a two-page discussion of the spectrum of conflict that had featured in the first edition.[96] Both of these changes were made in response to feedback received about the first edition.[97]

Conclusion

It is possible to draw several conclusions about the nature, role and significance of doctrine in the Commonwealth navies examined. Regarding the factors that were influential during the production of each keystone doctrine manual, four key influences were prominent. These were the role of individual officers, sometimes in senior positions but more often as members of doctrine writing teams or as individual authors; the influence of keystone doctrine manuals produced by allied navies, particularly the RN; the operational experiences of the navies studied and their allies; and the role of navies within the prevailing national strategy.

The relative influence of these four factors varied between the two navies as well as between individual keystone doctrine manuals. These variances occurred due to the broader political environment in which each manual was produced, with factors such as acquisition programs or lack thereof, changes in the naval roles prioritised within different strategic policy documents, public relations concerns and the personalities and agendas of key individual officers all contributing to the complex and fluid nature of this environment. Despite these variations all four factors were

nonetheless influential to a greater or lesser extent in the development of all of the keystone doctrine manuals studied, with the exception of *The Naval Vision*, which was not influenced by keystone doctrine manuals produced by allied navies due to its relatively early release date.

The intended and actual effects of keystone doctrine manuals present another similarity, as keystone doctrine was consistently used as a mechanism for explaining how the navy in question contributed to achieving its country's national military strategy. To this end, keystone doctrine established 'what is essentially a conceptual framework distilling wisdom from the corpus of work on maritime strategic theory', in order to explain what navies had to offer to strategic policymakers and governments at a foundational level.[98] The reason the navies studied used their keystone doctrine for this purpose was most likely cultural, although this in itself has several important dimensions.

The first of these was that both navies studied suffered due to public ignorance about what they did and why. As Haydon observed: 'Because the majority of Canadians do not understand or even recognise the maritime dimensions of their country, naval programs seldom enjoy public or political support'.[99] A similar assertion could be made about Australia. In an attempt to rectify this situation, one of the intended effects of keystone naval doctrine was the generation of public awareness about what navies did and why they did it.

The second important dimension of naval culture was caused by high relative importance of platforms such as warships, submarines and helicopters. To a much greater extent than army operations, and at least on par with air force operations, naval operations could be said to be platform driven. The impact of this platform driven culture was that it led to an emphasis within doctrine on explaining the role and importance of fighting platforms.

Closely linked to this was the most important intended role of keystone naval doctrine: the generation of political and strategic policy support for the acquisition and maintenance of naval platforms. In some cases, this intended effect was obvious, with the direct link between the production of *Adjusting Course* and the Canadian navy's campaign to bring about the *Upholder* class submarine purchase being the most prominent example. In most cases, however, this intent manifested itself more subtlety. In addition to generating public awareness about how navies contributed to achieving strategic policy goals, doctrine was also intended to generate awareness among strategic policymakers, who would ultimately decide on acquisitions and funding for the maintenance of existing platforms.

Aside from the factors already discussed, an important enabler of this intent underlying keystone naval doctrine development was the fairly consistent nature of the naval operations undertaken by the two navies studied. Naval operations have always fit into the three categories identified by Booth, diplomatic, constabulary and military. This has remained consistent even though the training emphasis has

shifted over time. Furthermore, naval operations are inherently flexible, and on a single voyage, a warship is capable of undertaking several missions, each of which may fall under the auspices of any of the different naval roles identified by Booth. Because of this consistency, keystone naval doctrine can afford to focus primarily on shaping national strategic rather than operational level events.

The incorporation of the academic discourse into keystone doctrine has provided a convenient means of enabling doctrine to fulfil its intended role of explaining what navies have to offer strategic policymakers and governments. Excellent examples of this occurrence are the discussion of Grove's typology for navies in Canadian navy keystone doctrine and the incorporation of derivatives of the Booth model into both Canadian and Australian naval doctrine. Other academic concepts, including command of the sea, sea control, sea denial and maritime power projection, featured prominently for the same reason.

Beyond the influence of existing academic works about naval strategic theory, individual officers in key positions, as well as the content of keystone doctrine manuals produced by allied navies, both played a key role in shaping the content of naval doctrine. In the case of individual officers, their work as members of doctrine writing teams directly influenced the content of doctrine manuals, although the support of senior individual officers, such as the presiding Chief of Navy and Chief of Naval Staff, was also fundamental to the successful initiation, production and distribution of keystone doctrine.

The influence of keystone doctrine manuals produced by allied navies was the result of historic factors, the culture of both navies examined is derived from that of the RN as is the culture of most other Commonwealth navies as well as more pragmatic and contemporary concerns.[100] These concerns are generally related to the nature of naval operations, which necessitate that allied navies work together frequently and at all levels of conflict. Because of this requirement, allied naval operations often blend into one, as in the Persian Gulf, where Australian and Canadian naval ships frequently support US Navy fleets. Yet the influence of keystone doctrine manuals produced by allied navies has, to date, remained *ad hoc* and informal.

Overall, keystone naval doctrine provided an important tool that the RCN and RAN used to pragmatically promote their interests. It did this by offering both policymakers and the public an explanation of the importance of the role navies played in fulfilling strategic policy goals. Yet in the process of achieving this goal, keystone naval doctrine came to play an even more important role, one in which it defines and explains how the application of naval power fits within the framework of both national strategy and maritime strategic theory.

Notes

1. For a longer, more detailed version of this paper see Aaron P Jackson, *Keystone Doctrine Development in Five Commonwealth Navies: A Comparative Perspective*, Papers in Australian Maritime Affairs No. 33, Sea Power Centre – Australia, Canberra, 2010.

2. James J Tritten, 'Maritime Expeditionary Operations and Intervention: A Doctrinal Perspective', in Robert H Edwards & Ann L Griffiths (eds), *Intervention and Engagement: A Maritime Perspective*, Centre for Foreign Policy Studies, Dalhousie University, Halifax, 2002, p. 170.

3. Michael Codner, 'British Maritime Doctrine and National Military Strategy', in Centre for Defence Studies, Kings College London (ed), *Brassey's Defence Yearbook 1996*, Brassey's, London, 1996, pp. 88-104.

4. The RAN has adopted the terms 'philosophical', 'application' and 'procedural' to describe the levels of its doctrine, although these terms roughly align with the military-strategic, operational and tactical levels of conflict. Royal Australian Navy, *Australian Maritime Doctrine,* 2nd edn, Sea Power Centre - Australia, Canberra, 2010, p. 3.

5. NATO-Russia Joint Editorial Working Group, *NATO-Russia Glossary of Contemporary Political and Military Terms*, Brussels, <www.nato.int/docu/glossary/eng/index.htm> (20 December 2008), p. 77.

6. The evolution of the 'levels of conflict' model is discussed in more detail in Gordon R Peskett, 'Levels of War: A New Canadian Model to Begin the 21st Century', in Allan English, Daniel Gosselin, Howard Coombs & Laurence M Hickey (eds), *The Operational Art: Canadian Perspectives: Context and Concepts*, Canadian Defence Academy Press, Kingston, 2005, especially pp. 100-106.

7. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, Defence Publishing Service, Canberra, 2000, p. 9.

8. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, p. 9.

9. Martin van Creveld, *The Art of War: War and Military Thought,* Cassell & Co, London, 2000, pp. 146-159. These theorists include Alfred Thayer Mahan, Julian Corbett, Herbert Richmond, Ken Booth, Geoffrey Till and Colin S Gray.

10. Julian S Corbett, *Some Principles of Maritime Strategy* [originally published 1911], Brassey's, London, 1988, pp. 91-106.

11. Royal Australian Navy, *Australian Maritime Doctrine*, 2nd edn, pp. 71-72.

12. Royal Australian Navy, *Australian Maritime Doctrine*, 2nd edn, pp. 72-75.

13. Ken Booth, *Navies and Foreign Policy*, Holmes & Meier, New York, 1979, pp. 15-25.

14. Marc Milner, *Canada's Navy: The First Century*, University of Toronto Press, Toronto, 1999, pp. 219, 223-229.

15. Tom Frame, *No Pleasure Cruise: The Story of the Royal Australian Navy*, Allen & Unwin, Crows Nest, 2004, p. 254.

16. In 1968, the previously separate Royal Canadian Navy, Canadian Army and Royal Canadian Air Force were unified into a single Service, the Canadian Forces. Although unification has since had many effects on the structure, role and culture of each of the environmental elements of the Canadian Forces, these are not discussed in detail herein. For an overview of unification and its consequences, readers are encouraged to see Desmond Morton, *A Military History of Canada: From Champlain to Kosovo*, 4th edn, McClelland & Stewart, Toronto, 1999, pp. 247-254.

17. Milner, *Canada's Navy*, pp. 247-248.

18. Despite the navy's anti-submarine warfare, capabilities it must be noted that the remainder of the fleet's capabilities were obsolete by the early 1980s and there were serious concerns within the navy about 'rust-out' of the fleet. Milner, *Canada's Navy*, pp. 279-280.

19. Donald A Neill, 'Back to the Basics: Defence Interests and Defence Policy in Canada', *Canadian Defence Quarterly,* December 1991, p. 41.

20. Richard Gimblett, 'A Century of Canadian Maritime Force Development: A Reinterpretive History', in Edward L Tummers (ed), *Maritime Security in the Twenty-First Century*, Maritime Security Paper No. 11, Centre for Foreign Policy Studies, Dalhousie University, Halifax, 2000, pp. 13-26.

21. Department of National Defence, *Canadian Defence Policy 1992*, Canadian Government Publishing Centre, Ottawa, 1992, especially pp. 20-23.

22. JL Granatstein, *Canada's Army: Waging the War and Keeping the Peace*, University of Toronto Press, Toronto, 2002, p. 397.

23. Department of National Defence, *The Naval Vision: Charting the Course for Canada's Maritime Forces into the 21st Century*, Ottawa, May 1994.

24. Douglas L Bland, *Canada's National Defence: Volume I: Defence Policy*, School of Political Studies, Queens University, Kingston, 1997, pp. 281-282; and Department of National Defence, *1994 Defence White Paper*, Canadian Government Publishing Centre, Ottawa, 1994.

25. Information obtained during an interview conducted by the author on 31 May 2007 with two senior Canadian navy officers (records on file with author).

26. Information obtained during an interview conducted by the author on 25 August 2008 with a senior Canadian navy officer, supplemented by email correspondence received on 18 March 2009 (records on file with author).

27. For example, see: P Richard Moller, 'The Dangers of Doctrine', in *Maritime Security Working Paper No. 5*, Centre for Foreign Policy Studies, Dalhousie University, Halifax, December 1996, pp. 57-71.

28. This assertion is based on a series of interviews conducted with Canadian naval officers in May/June 2007 and July/August 2008 (records of all interviews on file with author).

29. Information obtained during an interview conducted by the author on 31 May 2007 with two senior Canadian navy officers (records on file with author). *The Naval Vision* was not mentioned in the Report of the Special Joint Committee on Canada's Defence Policy, although this document did echo some of the discussion within *The Naval Vision*. Report of the Special Joint Committee on Canada's Defence Policy, *Security in a Changing World*, Parliamentary Publications Directorate, Ottawa, 25 October 1994.

30. Department of National Defence, *1994 Defence White Paper*, pp. 46-47.

31. RE Bush, 'The Victoria-class Submarine Program', *Canadian Naval Review*, vol. 1, no. 2, Summer 2005, p. 4.

32. Maritime Command, *Adjusting Course: A Naval Strategy for Canada*, Canada Communications Group, Ottawa, April 1997.

33. Peter T Haydon, 'The *Chicoutimi* Accident: Lessons Learned and Not Learned', *Canadian Military Journal*, vol. 6, no. 3, Autumn 2005, pp. 17-18.

34. Department of National Defence, *Challenge and Commitment: A Defence Policy for Canada*, Canadian Government Publishing Centre, Ottawa, 1987, pp. 52-55; and Haydon, 'The *Chicoutimi* Accident', p. 18.

35. Bush, 'The Victoria-class Submarine Program', pp. 4-5. Although a section of *The Naval Vision* discussed the role and importance of submarines, this was limited in length and scope and did not form a major part of the document. Hence, in shaping the Chrétien government's strategic policy review's conclusions about the benefits of submarines, it is likely that lobbying on the part of naval personnel and other interested parties had a much greater influence than doctrine.

36. Department of National Defence, *1994 Defence White Paper*, p. 47.

37. Once purchased, the *Upholder* class submarines were re-designated the *Victoria* class by the Canadian navy, although the two names have occasionally been used interchangeably. To avoid confusion, the submarines are only referred to here as *Upholder* class.

38. Haydon, 'The *Chicoutimi* Accident', p. 19.

39. Michael Craven, 'A Rational Choice Revisited–Submarine Capability in a Transformational Era', *Canadian Military Journal*, vol. 7, no. 4, Winter 2006-07, p. 25.

40. Maritime Command, *Adjusting Course*, p. 38.

41. Maritime Command, *Adjusting Course*, pp. 30-34.

42. Jeremy R Stocker, 'Book Review: Adjusting Course: A Naval Strategy for Canada', *The Naval Review*, vol. 86, no. 1, January 1998, p. 79.

43. Eric Grove, 'Review of Adjusting Course: A Naval Strategy for Canada', *The Northern Mariner*, vol. 8, no. 2, April 1998, p. 134.

44. Peter Haydon, 'Adjusting Course: Some Observations', *Maritime Affairs*, Spring/Summer 1998, p. 24.

45. Peter Haydon, '"Adjusting Course" ... A Strategic Orphan?', *Maritime Affairs*, <www.noac-national. ca/article/haydon/strategy_bypeterhaydon.html> (3 June 2012).

46. Department of National Defence, *Shaping the Future of the Canadian Forces: A Strategy for 2020*, June 1999, <www.vcds.forces.gc.ca/dgsp/00Native/rep-pub/dda/cosstrat/2020/Defence_ Strategy_2020_Ver4_e.pdf> (10 September 2007).

47. Canadian Forces, *Leadmark*, Directorate of Maritime Strategy, Ottawa, p. i.

48. Interview Transcript: Richard H Gimblett, Canadian War Museum Oral History Project, Interview Control Number: 31D 4 GIMBLETT R, interview conducted at Ottawa, 7 January 2004.

49. Interview Transcript: Richard H Gimblett, Canadian War Museum Oral History Project. This is also noted in the 'acknowledgements' section of *Leadmark*. See: Canadian Forces, *Leadmark*, p. 176.

50. A collection of these was published as Edward L Tummers (ed), *Maritime Security in the Twenty-First Century*, Maritime Security Occasional Paper No. 11, Centre for Foreign Policy Studies, Dalhousie University, Halifax, 2000.

51. Interview Transcript: Richard H Gimblett, Canadian War Museum Oral History Project.

52. Canadian Forces, *Leadmark*, pp. 28-49.

53. Canadian Forces, *Leadmark*, pp. 168-169.

54. Shadwick, 'The Leadmark Chronicles', p. 75, <www.journal.forces.gc.ca/vo2/no3/doc/75-eng. pdf> (10 September 2007).

55. Information obtained during an interview conducted by the author on 1 June 2007 with a senior Canadian navy officer (records on file with author).

56. Richard Gimblett, *Operation Apollo: The Golden Age of the Canadian Navy in the War Against Terrorism*, Magic Light Publishing, Ottawa, 2004, p. 40.

57. Information obtained during an interview conducted by the author on 1 June 2007 with a senior Canadian navy officer (records on file with author).

58. *Navy Charts New Waters in its Strategic Vision*, Press Release, undated but circa 2005, <www.navy. forces.gc.ca/cms_news/news_e.asp?id=245> (4 April 2007).

59. This publication is frequently informally referred to within the Canadian navy as 'son of *Leadmark*'. Canadian Forces, *Securing Canada's Ocean Frontiers: Charting the Course from Leadmark*, Directorate of Maritime Strategy, Ottawa, 2005.

60. The *International Policy Statement* consisted of four separate reports, including one on defence, which can be read as a de facto Defence White Paper. Department of National Defence, *Canada's International Policy Statement: A Role of Pride and Influence in the World: Defence*, Ottawa, 2005. For a detailed overview of the development of this report, see: Andrew Richter, 'Towards a More Strategic Future? An Examination of the Canadian Government's Recent Defence Policy Statements', *Canadian Military Journal*, vol. 7, no. 1, Spring 2006, pp. 31-40.

61. Peter T Haydon, 'A New Maritime Security Framework: Le mieux est l'ennemi du bien, non?', *Canadian Naval Review*, vol. 1, no. 2, Summer 2005, pp. 34-36.

62. Canadian Forces, *Securing Canada's Ocean Frontiers*, p. 4.

63. Information obtained via email correspondence received on 4 July 2007 from a senior Canadian navy officer (records on file with author).

64. Information obtained via email correspondence received on 31 March 2010 from a senior Canadian navy officer (records on file with author).

65. It is noteworthy that Vice Admiral McFadden's official biographical statement reads in part that:

> He was as well, Director of Maritime Strategy on the Maritime Staff, and led development of the Navy's current strategy document, which is called 'Leadmark'. It is perhaps indicative of a return to his naval roots that this document will be updated for the new century during his watch as [Chief of Maritime Staff].

Canadian navy, *Biography: Vice-Admiral Dean McFadden*, <www.navy.forces.gc.ca/cms/3/3-a_eng.asp?id=741> (2 April 2010).

66. Dean McFadden, Speech to the Conference of Defence Associations 73rd Annual General Meeting, Ottawa, 3-5 March 2010 (copy of transcript on file with author).

67. Information obtained via email correspondence received on 21 May 2008 from staff of the Sea Power Centre−Australia (records on file with author).

68. Department of Defence, *The Defence of Australia 1987 White Paper*, Australian Government Publishing Service, Canberra, 1987, p. 31.

69. Graeme Gill, 'Australia and the Eastern Bloc', in PJ Boyce and JR Angel (eds), *Diplomacy in the Market Place: Australia in World Affairs, Vol. 7, 1981-90*, Longman Cheshire, Sydney, 1992, pp. 229-234.

70. Frame, *No Pleasure Cruise*, pp. 258-259.

71. Carlyle Thayer, 'The Five Power Defence Arrangements: The Quiet Achiever', *Security Challenges*, vol. 3, no. 1, February 2007, p. 86; and Department of Defence, *Exercise 'Rim of the Pacific': Ex RIMPAC '04*, <www.defence.gov.au/rimpac04/> (25 November 2008). It is worth noting that the Canadian navy has also been involved in Exercise RIMPAC exercises since they began in 1971.

72. Frame, *No Pleasure Cruise*, p. 281.

73. Graeme Cheeseman, *The Search for Self-Reliance: Australian Defence Since Vietnam*, Longman Cheshire, Melbourne, 1993, pp. 108-114.

74. Department of Defence, *Force Structure Review*, Government Printing Service, Canberra, May 1991, pp. 1-2, 28.

75. The Hawke and Keating governments were in office from 1983-91 and 1991-96 respectively.

76. Graeme Cheeseman, 'The Howard Government's Defence White Paper: Policy, Process and Politics', *The Drawing Board: An Australian Review of Public Affairs*, vol. 2, no. 1, July 2001, pp. 15-20.

77. Information obtained via email correspondence received on 29 April 2008 from a senior RAN officer (records on file with author).

78. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, pp. 129-130.

79. By the time the first edition of *Australian Maritime Doctrine* was published, the Royal Navy's keystone doctrine manual, *BR 1806: British Maritime Doctrine*, was up to its second edition. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, p. 129.

80. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, p. 130.

81. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, p. 1.

82. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, chaps. 1-4.

83. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, pp. 37-45, 55-72.

84. Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, chaps. 9-10.

85. Royal Australian Navy, *The Navy Contribution to Australian Maritime Operations*, Defence Publishing Service, Canberra, 2005.

86. Royal Australian Navy, *The Navy Contribution to Australian Maritime Operations*, p. v.

87. Royal Australian Navy, *The Navy Contribution to Australian Maritime Operations*, p. 4.

88. Information obtained during an interview conducted by the author on 23 August 2007 with staff of the Sea Power Centre – Australia (records on file with author).

89. Royal Australian Navy, *The Navy Contribution to Australian Maritime Operations*, pp. 6-11.

90. Information obtained via email correspondence received on 26 March 2010 from staff of the Sea Power Centre – Australia (records on file with author).

91. Information obtained during an interview conducted by the author on 23 August 2007 with staff of the Sea Power Centre–Australia (records on file with author), supplemented by a telephone conversation on 6 July 2009 between the author and Sea Power Centre – Australia staff.

92. Royal Australian Navy, *Australian Maritime Doctrine*, 2nd edn, p. 213.

93. Fenn Kemp, 'Work Smarter Not Harder: Chief of Navy's Message to a New Generation Navy', *Navy News*, vol. 51, no. 21, 13 November 2008, p. 2.

94. Information obtained via email correspondence received on 26 March 2010 from staff of the Sea Power Centre – Australia (records on file with author).

95. Royal Australian Navy, *Australian Maritime Doctrine*, 2nd edn, chap. 4.

96. Royal Australian Navy, *Australian Maritime Doctrine*, 2nd edn, chap. 6; Royal Australian Navy, *Australian Maritime Doctrine*, 1st edn, pp. 19-20.

97. Information obtained via email correspondence received on 26 March 2010 from staff of the Sea Power Centre–Australia (records on file with author).

98. Michael Codner, 'Purple Prose and Purple Passion: The Joint Defence Centre', *RUSI Journal*, vol. 144, no. 1, February/March 1999, p. 38.

99. Haydon, '"Adjusting Course" ... A Strategic Orphan?', p. 1.

100. The historical aspect of the link between Commonwealth navies is elaborated further in Jackson, *Keystone Doctrine Development in Five Commonwealth Navies.*

12 Protecting Sea Lanes in a Globalised World

Norman Friedman

The US Navy, right now, finds itself in a position recalling that of the Royal Navy when the Dominion navies, most notably the RAN, were created. That similarity of position may give an American concerned with his navy's current problems a peculiarly apt understanding of events a little more than a century ago.

At one time, it was said that battleships determined who had command of the sea, but that cruisers were how that command was exercised. The battleships would be concentrated into a battle fleet, which was the only thing that could deal with another battle fleet, but the cruisers would operate, separately, around the world. The only ships they could not stand up to would be battleships, and the superior battle fleet would deal with that problem. In this sense, the symbol of *Pax Britannia* was the cruiser. Cruisers protected trade, which was the lifeblood of the British Empire. In peacetime they enforced what is now called 'good order at sea' and they could also intervene (on a small scale) ashore – cruisers typically carried guns which their landing parties could carry ashore. Cruisers were also integral to the fleet as it evolved from the 1880s onwards, and the need for both battlefleet and trade protection cruisers stretched British resources. The reference to colonies is actually to the Dominions: early in the 20th century, the Admiralty found itself asking the Dominions to help finance it, because they benefited from the protection the Royal Navy offered. Exactly what did (and did not) happen is a cautionary tale for the current US Navy.

There are, of course, no sea lanes as such; they are merely shorthand for the mass of ships at sea. In theory, once ships were steam-powered, they did not have to follow particular routes. However, left to their own resources, ship-owners followed great-circle (minimum distance) routes which did define trade routes, and that practice in turn made it much easier for a raider to find targets.[1] It was of course impossible to imagine protecting a trade route; there were not nearly enough ships in the whole world for that.

For the 19th-century Royal Navy, initially unarmoured ships (cruisers) generally cost so much less than armoured ones (battleships) that the cost of applying British naval supremacy was low. By the 1890s, however, cruisers were becoming expensive. The new armoured cruisers cost as much as battleships. The Admiralty found itself in deeper and deeper financial trouble as it tried to maintain both a superior battle fleet and sufficient numbers of powerful enough cruisers. Ultimately, the Admiralty sought support from the Dominion governments, including that of Australia. It argued that they relied on the seaborne trade the Royal Navy protected, hence that they should contribute to the collective defence of the Empire – meaning,

to the navy which provided that defence. The key point was that the self-governing Dominions were essentially independent, bound to the United Kingdom by largely informal ties. They were allies much more than colonies or evolved colonies. Thus, the Admiralty had to rely on exactly the kind of persuasion that the United States relies on to convince its current allies to share its burdens.[2]

This attempt by the British Empire to organise its allies - the Dominions - to help protect its global trade against raiders and other enemies seems analogous to the current US attempt to organise cooperative naval means to protect global trade. In some important ways, the British Empire was much like the current loose coalition of maritime powers. Despite its name, the Empire was unable to coerce its major elements, such as the self-governing Dominions (later the Commonwealth) to contribute to imperial defence. Agreement had to be voluntary, and it is interesting to see how arguments were marshalled to convince the independent governments involved to contribute to the protection of the Empire's lifeblood, its maritime trade. It has also become clear in recent years that the formal Empire was shadowed by an informal empire of countries in which the Empire, particularly the United Kingdom, had important economic interests – and which, to some extent, assumed that the Empire would help defend them. The existence and importance of the informal empire made global trade even more obviously important.

The British Empire

It might be imagined that the British Empire was little different from the French or, for that matter, the German or Russian, but that was not so. The British Empire was recognisably modern in a way that the others were not. Now it is often suggested that for all the major European powers, empire was pointless because it literally did not pay. That question would have made sense in London a century ago, but not in Paris or in Berlin or in Moscow or, for that matter, in Tokyo. Everywhere but in London, it would have been taken for granted that the more colonial territory a country had, the greater it was, whatever the intrinsic value of that territory. Martial glory certainly mattered in London, but the value of colonial wars and of what they gained was always much more open to debate.[3] One explanation would be that the City of London – the British banks – was far more central to the British economy than were similar institutions abroad.

In effect, the English Civil War and the Glorious Revolution began a change in British society that favoured finance and international trade over land and territorial conquest.[4] Much of the British Empire (such as Hong Kong or Singapore) was seized because it was valuable to support trade or to protect chokepoints on key trade routes (such as Aden *en route* to India).[5] The formal Empire may not have paid its way, but it supported a much larger informal empire, which did. During the glory days of the City of London, in the 19th and early-20th centuries, it was by far the financial capital of the world. It financed much of the world's trade. It also necessarily had enormous influence on the government in Whitehall. That

gave British foreign policy a flavour radically different from that of the continental European powers. The linkage between the United Kingdom and both the informal and the formal empire was largely financial (which is why the formal empire is so far from being the whole story of the Empire). The industrial revolution gave British technology a considerable lead over that of continental rivals, although that lead narrowed or disappeared towards the end of the century. It was natural that British banks would float the bonds that financed the purchase of British technology by so many foreign countries. Warships were a case in point; by the 1890s, British yards built nearly all the world's export battleships and cruisers. Often the banks involved had ties to particular shipbuilders.[6] None of the other European powers developed a British-style parallel or informal empire, because finance and trade were far more important to Britain than to continental powers.[7]

Some would argue that the British Empire was always a cooperative entity, and that it survives today in the conglomeration of countries which more or less accept US leadership. There is now financial integration, to the extent that there are two principal capitals of world finance, London and Wall Street, which share many of their major banks. In that sense, it is certainly appropriate for an American to discuss the implications of the Empire on the Royal Navy and its Dominions. If empire meant British possessions plus the self-governing Dominions (such as Australia), then clearly the United States was not part of it. However, historians increasingly appreciate that the formal aspect of the Empire grossly understates reality. Among other things, it overstates the control exercised by the British Government in London. One might go further. The American colonies were a prototype of the self-governing dominion. For the British Government the great lesson of the American Revolution was that it was impossible to coerce local settler governments, for example to contribute to collective defence. During the 19th century, discussing the defence of the Empire, a senior British official went so far as to say that membership in the Empire (for the whites running Dominions and even colonies) was essentially voluntary. Unless it was to their advantage, they might well decide to leave – and nothing could be done about that. There were three great reasons for the locals to stay in the Empire. One was their feeling of common blood with those in the British Isles, a sense of belonging that accounts in large part for the outpourings of support in both World Wars. A second was the sense that the Empire as a whole would protect them against foreign depredation. It was always obvious that foreign powers on the make would be more than happy to seize British colonies, but that they would not do so as long as British power prevailed. A third, probably by far the weakest, was the trade connection represented by the Empire

Instead of formal Empire, it may be more realistic to think in terms of a *British system*, reaching maturity some time in the mid-19th century.[8] This system included everything normally associated with the Empire, but it also included a kind of shadow or informal empire of countries or areas linked to the Empire economically and with parallel interests of other kinds as well. For example, the 19th-century

United States was a major British market, employing a great deal of British capital, and in important ways, its interests paralleled those of the British. However, the United States was by no means a British ally at the time, and most Americans probably thought of Britain as a potential future enemy. For that matter, so did the British. In the 1850s and the late 1860s, the Royal Navy built powerful cruisers specifically to meet the supposed commerce-raiding threat of new US warships.[9]

The Monroe Doctrine, the major statement of American 19th-century foreign policy, illustrates the reality of parallel interests. Proclaimed in 1823, the Doctrine demanded that foreign powers without existing interests in the western hemisphere stay out. In practice that included preventing Spain (which retained Cuba) from trying to reconquer her lost Latin American colonies. The doctrine had teeth – in the form of the Royal Navy, as the US Navy could hardly have enforced it. For the British, the doctrine offered two very important advantages. It formally conceded British control of Canada, which the United States had tried twice to undo. Second, and probably more importantly, it guaranteed British trading access to the potentially rich markets of South America. About the end of the 19th century, it was common to write about 'Greater Britain,' including the United States (although many Americans would have disagreed vehemently).

The obvious military difference between formal and informal empire was that the formal Empire was subject to command from London. British and Empire troops directly protected it, so that (at least in theory) any attack on part of the Empire would risk conflict with the United Kingdom. However, this distinction is not entirely clear. Membership in the informal empire might also entail protection; because London might well respond to attacks on informal empire areas which would in turn threaten the British economy. For that matter, maintaining British naval forces near areas of the informal empire might well deter attack, since an attacker might have to attack those naval forces. Conversely, London lacked the power to compel most of the Empire to provide major support in a crisis.

China is an interesting case in point. By about 1930, British commercial operations in China were very important to the home country. The British saw the Japanese invasion, from 1931 on, as a direct assault. They were shocked that their large China fleet had demonstrated no deterrent effect, and that the Japanese treated British civilians in China so badly. Surviving Admiralty papers show clearly that it was the Japanese assault on China, which began well before Hitler took power, which triggered British rearmament. The importance of China (and other Asian territories) to the Empire explains why, from 1919 on, the Royal Navy concentrated on an Eastern war plan rather than on European contingencies.[10] There was a reason that design discussions about new warships emphasised the need for long range (explicitly for the fleet movement East, which was in the war plans). This single requirement for range made most of the existing Royal Navy obsolete after World War I (WWI). The big County class cruisers were conceived to operate in the East and to hold Japanese attention (while the fleet steamed east) by threatening

Japanese seaborne communications.[11] The doomed voyage of HM Ships *Prince of Wales* and *Repulse* reflected this idea, of deterrence, although in their case no real follow-up was possible.

It might be argued that the real distinction between formal and informal empires, from a military point of view, was that the formal Empire could be garrisoned for defence, whereas the defence of the informal Empire – of British interests abroad –was limited to naval forces. That was a nearly empty distinction, however. Much of the British army was permanently tied down in India after the Sepoy Mutiny. The rule laid down at the time was that British strength in India must be equal to 50 per cent of Indian Army strength. Given the sheer size of the Indian army, that left very little for anywhere else in the Empire. The British army fought numerous colonial wars in the 19th century, but it could gather the necessary strength only by denuding most of the Empire. That in turn was possible only because the Royal Navy commanded the seas, so troops could quickly be shuttled around the Empire. It was never possible to garrison any large part of the Empire, such as Canada, against a protracted threat – which was one reason to maintain good cross-border relations with the United States.

Although the informal empire could not place formal demands on Whitehall, it enjoyed considerable indirect influence, because the great banks, and traders and investors could certainly influence policy. Trade was often much more important than the fate of a more or less worthless bit of overseas territory formally under British control (except for the fear that the loss of that territory would have further consequences). Conversely, territories valuable to protect trade were highly valued despite their lack of other resources. Aden was worthless except as a coaling station at the mouth of the Red Sea. The British willingly traded Heligoland, whose population was considerable and loyal, for Zanzibar, because the latter was important for East African trade (later, when the German navy was a vital consideration, this exchange did not seem nearly as wise).

Not only was the United States part of the British system, the system has survived to the present, albeit in modified form. The United States currently heads a more or less (often less) unified commonwealth of states with largely parallel interests, just as Britain did in the latter part of the 19th century. The United States also finds that its commonwealth partners see little point in sacrificing heavily to commonwealth sea power, as long as the principal sea power is willing to pay what it must. Also like the British of the late-19th and early-20th centuries, the United States finds itself limited financially, and it is not nearly so obvious that it will be able to continue to supply enough sea power to go around. To what extent can it convince its partners to spend more? US arguments enjoyed only limited success during the Cold War, when many of the partners felt much more threatened.

Put another way, the essence of seapower is that the sea unites rather than divides, that transport by sea is so much easier than transport by land, that in some strange sense coasts far apart on a map are actually close together. To anyone thinking only of events on land, that is nonsense. The British Isles are small bits of land just off the coast of continental Europe, with few resources. That is the sense in which the German General Staff in both World Wars assumed that the British had limited ability to deal with their army, and in which most people saw Britain as alone, with little chance of survival, in 1940. The sea made the informal empire a reality, because it made international seaborne trade possible and worthwhile. In 1914 and in 1940, the British were aware that, as long as they retained command of the world ocean, they had direct access to the resources of both their formal and informal empires. It is in this sense that Winston Churchill wrote about 'the new world coming to the rescue of the old.' As a historian, Churchill was well aware that Britain *plus overseas resources* could hold off a continental power long enough for overwhelming force to be organised against it, so long as Britain itself could not be invaded successfully. That was why he was confident of ultimate victory in 1940. It was hardly the puzzling choice that many now see.

The sea also provided access to the formal Empire, which in both World Wars provided a vital combination of sea and land power. For example, until the end of 1945 India was by far the greatest source of labour in the Empire. The self-governing Dominions provided large numbers of troops in both World Wars, and to some extent, it seems to have been British national policy to provide the bulk of naval forces while the Dominion contributions were weighted far more to labour. That made sense, in that naval power required considerable infrastructure and peacetime development, whereas armies took much less to train and equip. The results of this policy are still obvious. For example, the Australian military tradition is overwhelmingly an army tradition, which might seem odd in view of the fact that Australia is an island utterly dependent on sea transportation for both vital imports and for exports.

The other major European powers looked back to a history in which possession of territory was the most important element of national power. It did not really matter whether the territory contributed to national prosperity; in fact martial glory overshadowed prosperity as a national aim. Germany seems to have been a particular case in point. The Kaiser and the Junkers were colliding with a rising middle class for which martial glory was not very important. In the 1912 elections the Social Democrats, who very much represented the view that prosperity was far more important than martial glory, triumphed. Accounts of key German Government meetings in 1912-14 suggest a sense of panic, which may well have been engendered by the 1912 elections and their likely consequences. For the British, the issue of glory and land versus finance and economics had been decided by the English Civil War and by the Glorious Revolution. Obviously, there were many in 1914, who gloried in the sheer extent of the Empire, but seaborne trade was

probably far more important in the government's eyes. Much of the formal Empire, after all, has been gained specifically to support naval mobility, in the form of bases and coaling stations.

This distinction between a continental (German, French, Russian) idea of the point of government and a British one mattered enormously. From a current point of view, it explains how the current US-led system is so much like the old British Empire. Historically, it explains a failed British attempt to substitute deterrence for active defense against Germany. Admiralty-funded studies showed that the big British banks enjoyed enormous leverage over Germany.[12] Suddenly cutting off credit would, it was thought, cause German society to collapse within months. Germany would literally be unable to import what it needed; a banking attack would be the most effective form of blockade. The banks warned that the British economy would also be damaged, though not as badly. In effect, the world banking system gave the British the equivalent of the nuclear deterrent, albeit in double-edged form. The British Government sought to publicise this fact by supporting publication of Norman Angell's *The Great Illusion*, which claimed that a future world war was unsustainable economically. From a modern perspective, the fascinating point is that the Germans were uninterested because their leaders regarded economics as beneath them. The lesson for those who deal in deterrence is that its success depends on what the prospective enemy fears, not on what the deterrer *hopes* he fears. We now know that the financial bomb did not have the sudden impact envisaged, although ultimately it hollowed out the combatants as WWI proceeded.

Anyone who experienced US policy during the age of strategic deterrence in the 1970s would see some interesting parallels to British naval policy in the run-up to war in 1914. Those who came to believe in deterrence saw all purely military policy as statements rather than as substantive measures ensuring victory or defeat. A First Lord like Churchill, if aware of the underlying deterrent, would have been far more concerned with numbers and paper characteristics of ships (such as their main armament) than with details such as the quality of fire control; his main concern in shipbuilding would have been to maintain numbers at an affordable price.[13] Yet to be credible, the ships had to be increasingly expensive, because they had to match or overmatch foreign types. Once deterrence failed, no one involved would have been particularly anxious to remember such concerns. That seems to have been exactly what happened.

For the pre-1914 Admiralty, the possibility that Germany could be deterred would have had an interesting consequence. It would have focused attention on potential threats that could *not* be deterred. France and Russia were already quasi-allies also focused on Germany, but Japan was in a very different position. Although formally an ally, Japan clearly had ambitions, for example in China, which would bring her into collision with the informal, if not the formal, empire. The Admiralty opposed renewal of the Japanese Alliance in 1909, albeit unsuccessfully. That year it pressed the Dominions to support a Pacific fleet, the only point of which was that

it could oppose some future Japanese threat. Although the ultimate weapon was financial, it seems reasonable to imagine that it had to be backed by the statement of overwhelming naval strength in European waters because that naval strength demonstrated the seriousness with which the British viewed the Germans. If that was true, then the need to maintain a deterrent in European waters drastically limited what the Admiralty could spare to deal with the undeterrable Japanese.

The Cost of Empire

The City was both a key element of British power and a key limitation on government spending. The British Government had to observe fiscal discipline because it had to maintain London's international position. That in turn limited investment in sea power. In the 1870s and 1880s, for example, both Disraeli and Gladstone felt compelled to limit naval spending, even though it might be imagined that as an imperialist Disraeli would have felt otherwise.[14] Both could limit spending because potential threats were quite limited; but by the mid 1880s, the situation was becoming threatening. In addition, the rate of technological change was accelerating, so that ships and other naval resources had to be replaced more frequently, and more expensively. It took a naval scare (in which Captain John Fisher, the future First Sea Lord, had a major role) to unlock the coffers.[15] The money was raised through a special bond issue. The *Naval Defence Act 1889* turned out not to guarantee British seapower for long, because the ships built under it became obsolete well before they wore out. The worst problem was not the battleships, but rather the big cruisers that had emerged since 1889.[16]

Two things happened. First, it appeared that large fast cruisers could work with a battle fleet, both as scouts and as a fast wing. To do that they needed armament powerful enough to damage battleships. The new quick-firing guns seemed to offer that possibility; at the Battle of the Yalu (1894) Japanese ships armed with such weapons badly damaged the unprotected parts of two nominally superior Chinese battleships. The Royal Navy built a few very large protected cruisers, beginning with HM Ships *Powerful* and *Terrible*, on the theory that a combination of high speed and large batteries of powerful quick-firing guns could provide them with battle line capability. Initially these ships were protected only by armoured decks, but in the 1890s new lightweight armour appeared which made the big cruiser even more formidable, particularly since existing heavy guns fired very slowly, probably too slowly to hit a fast-moving manoeuvring ship.

Second, foreign powers began building their own large armoured cruisers, some of them with very long endurance particularly adopted so that they could raid British commerce without relying on British-controlled coal. Any scheme of trade defence required that the Royal Navy deploy ships of similar power – in large numbers. The terrible problem was that the Royal Navy needed the numbers even if its enemies did not build these expensive cruisers in numbers, because it had to be able to meet them wherever they appeared in wartime. The largest cruisers each cost at least as much as a battleship.

A further fiscal crisis ensued as the 1889 bonds came due. Fisher, now an Admiral, became First Sea Lord in 1904 specifically because he could envisage radical measures to keep the Admiralty solvent (HMS *Dreadnought* was the least of them).[17] One of Fisher's ideas, the one described in this paper, was to tap the Dominions for naval contributions, on the ground that they were part of a seaborne Empire that would live or die by its grasp of sea power. A more rational form of taxation introduced in 1909 helped, but the Admiralty could never completely solve its financial problem because the unit cost of its ships kept rising inexorably. By 1914, the main hope seems to have been that new technology, such as that of submarines, could reduce the need for new capital ships.[18]

Imperial Defence

If the essence of empire was seaborne trade, then ultimately imperial defence meant maintaining enough sea control to keep trade alive. It was not primarily about defending the Empire itself, in the sense of the 'bits of red' on the map. That was the view from London, but obviously not from the colonies abroad. For example, in about 1880 the Carnarvon Commission conducted a lengthy inquiry into the defence of seaborne trade.[19] Without any form of ocean surveillance, there could not be much hope of catching enemy commerce raiders in the open ocean. Nor, it turned out, could enough escorts (with sufficient capability) be built and maintained to revive the convoy tactics of the past. The convoy problem was not merely individual ship performance, but the need to extend the system far beyond European waters, at a high cost in numbers of warships. The Carnarvon Commission pointed out that in 1880 the British had a near monopoly on high-quality steaming coal. In a world whose merchant marine was increasingly steam-powered, a raider also had to be a steamer. The British not only controlled the supply of coal on a global basis, they owned most of the coaling stations abroad, which were located on British-owned territory. The Commission could reasonably conclude that providing small garrisons and fortifications to protect the coaling stations would help protect empire trade (the Commission also called for a Royal Navy sufficient to keep the sea, but its emphasis was on defending colonial territory).

The Commission's report would have pleased the settlers near those coaling stations. However, they wanted more. In places like Canada and Australia, the locals were far more interested in protecting their territory than in protecting trade. To some extent, they could raise their own armies for self-defence, but that would absorb resources that might otherwise have been contributed to an Empire fleet. Even if the Dominions formed fleets, they might well see them in local terms rather than as contributors to overall Empire security.

In the years after Carnarvon, the British monopoly was diluted, and potential enemies such as France (and the United States) built commerce-raiding cruisers with enough bunker capacity to circle the earth, hence to avoid protected coaling stations. The British found themselves planning wartime deployment of fleets of cruisers in 'focal

areas' through which trade would pass and into which raiders would be drawn. From the point of view of a colonial or Dominion government, the cruisers in the focal area were also a means of protecting its own territory from seaborne assault.

It could be argued that the load on focal areas would be limited because Britain enjoyed an enormous geographical advantage. The British Isles were, in effect, a stopper in the bottle formed by the North Sea (which was also the outlet of the Baltic). In the Mediterranean, where the two largest hostile fleets might operate (those of France and Russia), Britain controlled the chokepoint of the Turkish Straits and also the chokepoints between the Eastern and Western Basins (Malta), between the Mediterranean and the Red Sea (Suez), and between the Mediterranean and the Atlantic (Gibraltar). However, the Russian build-up in the Far East and the French seizures of Madagascar and of Indo-China provided potential raider bases outside the seas closed by the chokepoints – at a time when British trade with China was growing more important. However, none of the overseas bases had any hinterland industry supporting it, which meant that any squadron based overseas could not operate for long. That was certainly clear when the German squadron under Admiral Graf von Spee operated from the German colony at Tsingtao in China. Once he had defeated Admiral Craddock at Coronel off the coast of Chile, von Spee had to get home to Germany – a hopeless task. The detached cruisers *Emden* and *Königsberg* certainly did real damage, and they tied down large Empire forces, but they too could not last for long.

Fisher found himself offering a new approach to trade protection. It might be possible to use intelligence supplied by an Empire radio net to deduce the positions of raiders. Big fast ships might be vectored to run them down.[20] That would be far less expensive than distributed focal area fleets, but it also made the distinction between defending individual colonies and Dominions and defending the trade of the Empire unpleasantly obvious. It did not help that Fisher kept emphasising the need to concentrate the Empire's naval forces.

The Royal Navy's problem was a shortage of resources. The growing threat of the German navy in the North Sea was making it more and more difficult for the Royal Navy to provide the necessary resources beyond European waters. Various expedients, including the beginning of ocean surveillance, were tried as a way of making better use of what there was, but the resource problem could not really be solved. At a series of Colonial Conferences, the Admiralty turned to the major Dominions for help.[21] It wanted support without direct obligations. Repeatedly it argued that the only efficient way to provide sea power was to concentrate its control – which meant, in the Admiralty. The Admiralty's argument was that British naval dominance benefitted not only the home country but also the Dominions who relied so heavily on seaborne trade. To anyone naval, it is obvious that the sea unites, and that what might seem very distant is actually quite close by sea. Holding the bulk of the German fleet in the North Sea limited German raiding operations far

afield, though it could not completely close them down. It was up to the Dominion governments whether they contributed to this kind of enforcement, which we can see certainly benefitted them considerably.

The rising Dominion governments saw things differently. Their voters would approve defence, but not a giveaway to London. Dominion governments understandably feared that whatever they contributed would end up in the North Sea, far from home and far from their own needs. A particular problem for the Dominions in the Pacific was that Japan and even Russia were more immediate threats than Germany. In peacetime, many in the Dominions saw little point in naval investment. Australia was a very notable exception, but in its case, it must have seemed obvious that without a navy Australia was terribly vulnerable to seaborne attack. Other Dominion governments – those of Canada, India, and South Africa – did not share that view. New Zealand was too small to create a navy, but it did finance construction of a battle cruiser for the Royal Navy. Once war was declared in 1914, the Dominion governments and their populations were certainly willing to help, but that help took the form of armies, which could be raised relatively quickly and which did not have to be built in peacetime.

The Dominion governments, particularly those of Australia and Canada, extracted a key concession: they would form their own navies, with assistance from the Royal Navy. The British hoped that in the event of war, these local navies would come under Admiralty operational control, but that was a hope rather than a certainty. Nor was it possible for the Admiralty to force any Dominion government to build a substantial naval force. Australia was its sole pre-1914 success.

At the 1909 Colonial Conference, First Sea Lord Admiral Fisher suggested a model for the Dominion navies the Admiralty could no longer head off: the fleet unit, consisting of a battle cruiser supported by light cruisers. Supported by the new ocean surveillance, a fleet unit could run down raiders or the sort of limited forces that the Germans could maintain far from home. Because all the Dominion navies would share Royal Navy training and practices, the fleet units could unite into a Pacific fleet in the event of a great-power challenge, such as by the Japanese. Australia alone purchased a fleet unit. During the early part of WWI, the RAN did indeed help counter the rump German force stationed in China, but by 1915, it was integrated into the Grand Fleet in the North Sea.

For every unit of the Empire, such as Australia and Canada, it was never altogether clear what defence meant. The obvious meaning was defence of territory, which was a coast defence and land warfare issue. However, the Empire was very much a seaborne entity, and the great prize it had to defend was its trade. How could that be done? How could resources for trade defense be balanced against resources for central naval war, which in the late-19th and early-20th centuries assumed centre stage due in part to Mahan? British and, to a lesser extent, Australian archives offer considerable insight. These issues have not really been addressed before,

partly because their solution involved the extensive and novel use of intelligence sources. By way of analogy, perhaps the most interesting item the United States is now offering its partners in naval collaboration is an ocean surveillance picture extending beyond their shores. This picture is now the basis for proposed operations. Similar pictures may be the basis for dealing with the threat of piracy in areas such as the Malacca Strait.

The problem and its attempted solutions highlight the issue of priorities and numbers to cover vast ocean spaces, the problems that any coalition of navies now faces. The attempts to protect trade also highlight the way in which a main fleet could or could not affect such protection. The British, for example, aggressively followed high-low strategies, the main fleet in effect raising the bar so that potential commerce raiding fleets could not afford to use first-class units against trade routes. There are interesting modern parallels, terrorists and pirates being modern commerce raiders.

WWI hardly ended the Admiralty's problem. In 1919, the Admiralty considered its fleet essentially obsolete, as only HMS *Hood* embodied any of the lessons of Jutland. British cruisers and destroyers lacked the endurance to meet the most likely future enemy, Japan. The Dominions asked for naval advice, and Admiral Jellicoe, former Grand Fleet commander and former First Sea Lord, was sent on a mission to them. In each Dominion, he laid out a possible naval plan based on his perception of the Japanese threat. He also proposed the British strategy of the next 20 years, to concentrate a fleet at a Far Eastern base in the event of war (he is said to have chosen Singapore, but in fact he offered several alternatives). Although the Admiralty formally rejected Jellicoe's comments (probably to avoid openly advocating preparations against Japan), in fact it adopted his strategy – which was really the only one the Admiralty could have chosen. As before WWI, the Admiralty knew that the new strategy was not affordable. It went back to the Dominions.

This time it could be argued that contributions were directly in their interests, because the entire strategy was directed at the main threat that exercised them, Japan. The Admiralty proposed burden sharing. It would pay directly for a new-generation battle fleet, including attendant cruisers and destroyers. For their part, the Dominion navies would provide the mass of cruisers needed to protect trade in the Far East. Hopeful Admiralty papers pointed out that cruisers made excellent training ships, but some of the comments cautioned that Dominion governments might be led to imagine that they were being asked to build relatively small cruisers of pre-1914 or wartime type. However, the type needed for Pacific operations would be quite large and expensive (in effect the County class, although those ships had not yet been designed). The project died before the Dominion governments could kill it, because the Admiralty project for a new battle fleet died at the 1921 Washington Naval Conference. Even before that, it must have been clear that the only Dominion really interested in a substantial navy was Australia, and that was hardly enough. Once again, it had been impossible to gain support for collective Empire defence.

Naval Cooperation

The United States could never advocate a simple system in which all allies and semi-allies simply contributed to a common naval force; it has always had to hope for local cooperation. What is new is the extension of (hoped-for) cooperation beyond the existing formal alliances. There is also a lot more interest in integrating alliance forces with US forces, rather than hoping that alliance navies will operate in their own areas. The hope now is that governments which benefit from the US position as a naval police force ought to become involved in that role. It should be obvious that the world benefits enormously from what is sometimes called good order at sea, and that much – but hardly all – of that benefit can be attributed to the presence of the US Navy. Now the US Navy is beset by the kind of financial problems the British faced about a century ago. Advancing technology makes its ships individually much more expensive, so their numbers are shrinking. The challenges posed by China and by the terrorist war make it more and more difficult to spread that seapower around the world. To what extent can the United States and its navy convince other countries to share this burden? To that is added a problem the Admiralty did not face, that many of the governments with which the US Navy would like to cooperate are very unwilling to cooperate with each other.

There is also another problem. The US Navy increasingly relies on (and benefits from) ocean surveillance in various forms. At least in theory, ocean surveillance can enormously simplify the job of maintaining good order at sea, because it can spot problems and thus make it possible to concentrate the required forces. However, the technology involved is necessarily sensitive. Worse, American ability to organise forces around an ocean surveillance picture is probably the most important *quid pro quo* it can offer in return for naval collaboration.

Overall, the history of collective defence has not been very happy. During the Cold War, the United States tried hard to convince its European allies to build up their forces to meet specified goals. It never succeeded, partly because the allies had a rather different idea of the point of their contributions. For much of the history of Cold War NATO, the US idea was that only a NATO ability to fight a protracted war would effectively deter the Soviets. Europeans were painfully aware of what a protracted non-nuclear defence of Western Europe would mean: World War II all over again. That was hardly attractive. Their strong preference was to rely on nuclear deterrence, with just enough conventional force to make it impossible for the Soviets simply to walk into Western Europe. American cynics often said that the allies would contribute just enough to keep the Americans, with their heavy deterrent force, in Europe. The European calculation was probably very realistic: the Russians might wish to seize all of Europe, but they were not so enthusiastic that they would risk destruction to do so.[22]

Notes

1. Sailing ship routes were determined by prevailing winds, and were apparently fairly well defined; that explains why it was possible, in the sailing ship era, to intercept key convoys (such as Spanish bullion colonies).

2. From an external or international legal point of view, the British Empire was a unified entity. Thus limitations imposed by the Washington Naval Treaty, for example, did not distinguish between the Royal Navy and, say, the RAN. Both were part of the Empire naval force, even though they were not under any kind of unified command, and the Australian Government could and did limit cooperation with the Royal Navy under some circumstances. The Statute of Westminster later recognised this difference formally. The legal view blinds us to the coalition character of the Empire and Commonwealth, which is now obvious.

3. This despite the fact that the British Empire covered far more of the earth than the others did. However, a significant part of the Empire consisted of self-governing Dominions (such as Australia, Canada, New Zealand, and South Africa) which were more allies than possessions. Their status was concealed, in effect, by the official British reluctance to enter into alliances with other European powers. India was a special case. It was considered so important that a great deal of territory was obtained in order to secure the sea route to that country, particularly after the opening of the Suez Canal. Egypt is also a special case. It was never formally part of the Empire, but it was run and garrisoned by the British from 1882-1936, and after that (until 1952), it was effectively a British protectorate.

4. Another way to say this would be that in Britain money became more important than land as a source of prestige (a standard fixture of 19th-century British fiction is the collapse of land values as a source of wealth). Clearly, that was a slow evolution, but it had enormous implications. In every European country, the landed aristocracy was generally closely associated with the army. The psychology of an army emphasises the importance of particular bits of land, so conquest becomes prestigious. Navies are associated with global trade, and it is impossible to imagine seizing and holding a bit of the ocean. Sea power does value particular places, but only to the extent that they support ocean operations – places like bases and 19th century coaling stations. Obviously, this is a crude representation of a complex process, but the psychology of major navies is radically different from that of armies.

5. There seems to be a distinction between the initial British colonies in the Caribbean, which were valued for their products (such as sugar) and the later possessions valued because they gave access to markets or resources, or because they helped protect or support important sea routes. British inroads into Africa in the 19th century fit the model, in the sense that they offered access to the interior at a time when other European countries were seizing large parts of the continent and denying the British access through those colonies. On the other hand, some of the colonies in the Far East (Burma and Malaya) were certainly valued for what they produced.

6. The connection between banks and shipbuilders was forcibly made by the late David Topliss, at the time curator of the Brass Foundry outstation of the National Maritime Museum. Dr Topliss was engaged in writing a book on the export warship market, but very sadly died before he could complete it. He did produce one case study, of the dreadnoughts built or ordered in Britain for Brazil. David Topliss, 'The Brazilian Dreadnoughts, 1904-1914', *Warship International*, XXV, no. 3, 1988.

7. The Netherlands had a somewhat similar approach to finance and empire, but by the 19th century, it did not have anything like the same global reach or the same financial power.

8. As expressed by John Darwin, *The Empire Project: The Rise and Fall of the British World System 1830-1970*, Cambridge University Press, Cambridge, 2009.

9. 'Walker's Big Frigates' were built after the United States authorised five large steam frigates (*Merrimack* class) and a large steam corvette (USS *Niagara*) in 1854. Similarly, the *Inconstant*

class were designed specifically to deal with the fast cruisers the US Navy laid down during the Civil War, such as the famous USS *Wampanoag*. The US ships were not particularly successful; the 1854 ships did not make their expected speeds, and the Civil War ships were considered grossly over-powered. The British responses will be discussed in the author's forthcoming book on early British cruisers.

10. For various reasons this concentration on the Far East is not always obvious in surviving documents. Before the London Naval Conference of 1930 the Royal Navy often argued publicly for sufficient forces to deal with a hostile US Navy (the US Navy was even more belligerent in public). However, the problems of Atlantic warfare never figured in either navy's internal papers, so it seems clear that both used the other as a rationale for force structure (one British internal document of the 1920s, which explains the rationale for cruiser numbers explicitly in terms of the Japanese problem, is marked to show that this fact should not be revealed to the Prime Minister). The reason was that at Washington both the Royal Navy and the US Navy were allowed a margin of strength over the Japanese, on the ground that they would need greater strength to operate aggressively in the Western Pacific. Had the navies admitted that they were building only against Japan, their governments would probably have cut them to equality with the Japanese. In the late 1920s, when he was Chancellor of the Exchequer, Winston Churchill sought to cut the British naval program. He had already made the Ten Year Rule (that for planning purposes no war should be expected within ten years) self-perpetuating, and he asked the Royal Navy what threat it was building against. The navy cited Japan; Churchill went to the Foreign Office to obtain an official opinion that war with Japan was unthinkable. For about the next two years, the Royal Navy was reduced to seeking other war scenarios, mainly connected with British obligations to guarantee German security under the *Locarno Treaty 1925*. Once the Japanese showed their teeth in China, the navy was instructed to drop all unrealistic scenarios and return to the central problem of the Far East. For this sequence back and forth, see Stephen W Roskill, *Naval Policy Between the Wars* (two volumes), Collins, London, 1968. For Churchill's 1928 action to make the Ten Year Rule self-perpetuating, see vol. I, pp. 560–561; for cancellation of plans to base three battlecruisers in the East, on Foreign Office advice, see p. 563; and for Churchill's attempt to cut estimates based on 'the favourable political situation, especially as regards Japan' see p. 556. In volume II Roskill recounts that as early as May 1930 Sir Robert Vansittart, Permanent Secretary of the Foreign Office, was writing that Europe 'was riddled with pre-war thought' and that the possibility of a slide into war had to be accepted. On 15 July 1931, the Cabinet decided that the Ten Year Rule should be 'thoroughly examined in view of developments in 1932.' (Roskill, *Naval Policy Between the Wars*, vol. II, p. 144), and in March 1932 the Cabinet accepted papers by the Chiefs of Staff and by the Committee of Imperial Defence recommending that the Rule be cancelled. Presumably, cancellation was prompted by Japanese aggression in Manchuria, but Roskill also points out that German determination to rearm was becoming evident (at the ongoing disarmament conference the Germans began to demand military equality with the other powers, that is, cancellation of the Versailles Treaty limits). This was well before Hitler became Chancellor of Germany. After about 1934, the British knew that they faced both European *and* Far Eastern contingencies, and repeatedly Admiralty papers admit that it would be impossible to handle both. The closest the British came to a solution was to seek a quick decision against Japan and then swing their fleet back into European waters. The final pieces of bad luck were that the war started in the opposite sequence, and that the Royal Navy suffered considerable attrition during the initial European phase. The logic of the Pacific-first strategy may have been hope that a combination of appeasement and the Royal Air Force deterrent would hold off the Germans until the Japanese had been dealt with.

11. See Norman Friedman, *British Cruisers: Two World Wars and After*, Seaforth, Barnsley, 2010. The central problem was that the British could not maintain a fleet in the Far East in peacetime, because there was no infrastructure and, presumably, because it was impossible to keep large numbers of sailors in the area. The best that could be done was to concentrate most of the fleet

in the Mediterranean, from which it could steam east in an emergency. The voyage east might take some weeks, and something had to be done to deter the Japanese from using that window to strike south before the fleet arrived. Hence the idea of cruisers on Japanese trade routes. The idea was inspired by the success of the German cruiser *Emden* in tying down Empire and Allied naval forces in 1914.

12. Nicholas Lambert seems to have been the first to discover this line of policy, and to trace its consequences. See Nicholas Lambert, *Planning Armageddon: British Economic Warfare and the First World War,* Harvard University Press, Cambridge, 2012. The financial deterrent was known throughout the British Cabinet. It would seem to explain the otherwise puzzling lack of concern within the Cabinet as the crisis deepened in 1914. Underlying deterrence would also help explain why Admiral Fisher was so willing to embrace new technology (such as long-range submarines) well before it became fully practical. The deterrent argument may also explain the absence of formal naval war planning (which was used as a way of attacking Admiral Fisher).

13. The Jellicoe papers include the Admiral's complaints that Churchill cared too much about numbers and guns and far too little about the subtler factors that made ships survivable. Jellicoe believed that displacement was the only reasonable means of comparison, because it reflected such things as protection and subdivision; German ships often displaced more than their British counterparts. Very crudely, ship cost was proportional to displacement. Jellicoe attributed Churchill's thinking to his naïveté or shallowness, but it can equally well be traced to a deterrent cast of mind. A Temple Patterson (ed), *The Jellicoe Papers Vol I*, Navy Records Society, Bury St Edmonds, 1966, pp. 13-14, 27-28, 38-40.

14. Gladstone often said that he detested naval spending (because it did not contribute to British prosperity), and he managed to limit the 1889 naval expansion. It is much more surprising that Disraeli did the same. Given what was perceived as radical change in 1889 (the *Naval Defence Act*) it is no great surprise that those supporting the changes referred to the 'dark ages' of the Admiralty of the 1870s and 1880s. Several naval historians, particularly NAM Rodger, John Beeler and Andrew Lambert, have pointed out that this was less than accurate. The same Admiralty that the reformers regarded as hopeless had managed an excellent performance against the Russians during the 1854-56 war, culminating in creating an invasion fleet, which had so threatened St. Petersburg that the Russians had decided to seek peace. It had quickly built up superiority in ironclads once the French had introduced the new type of warship. Detente with France and then the collapse of that country in 1870 had dramatically reduced the need to face a European battle fleet. For some time it must have seemed that the Russians presented no great naval threat, and in 1877-78 the British were able to enforce a settlement in the Black Sea, eliminating the perceived Russian naval threat to the Suez Canal and hence to the vital route to India. The beginning both of systematic annual naval exercises and of a naval staff (in the form of the Naval Intelligence Division) can be traced, it seems, to the renewed Russian crisis of 1884-85. None of this is to suggest that naval officers in general were happy with Gladstone's parsimony, but it is interesting that they were unable to generate public opinion to break it until the late 1880s.

15. Fisher served as conduit for the story that was published by WT Stead as 'The Truth About the Navy.' The navy scare made British naval policy a public issue. In the past, it had been possible for administrations like Gladstone's to cut the building program as they liked. In recent years there have been suggestions that the scare was overblown, and that even before 1889 the Royal Navy was in a dominant position in Europe. Admiral Phipps Hornby oversaw the press operation, at the time the senior British seagoing officer (he had been placed in command of the fleet mobilized at the time of the Russian war scare of 1884-85). Phipps Hornby orchestrated a similar scare to press for a supplementary naval program in 1893, the conduit to the press this time being Fisher's rival Charles Beresford.

16. The principal problem was the advent of large armoured cruisers, each of which cost about as much as a battleship. The cruiser role also changed radically, mainly because technology changed. In 1882, when he explained the evolution of British cruisers, Lord Brassey (who had been on the Admiralty Board) wrote only of their role in trade protection. Unlike the frigates of the age of sail, unarmoured cruising ships were no faster than capital ships, and typically they had much less endurance under steam. They might serve as pickets off a port in which an enemy fleet was blockaded, but they could not be fleet scouts. By 1882, engine technology was changing to the point that relatively small unarmoured ships could be faster than capital ships. However, the first British cruisers designed to work with the fleet were the *Leander*s, which were designed specifically as fleet torpedo ships (studies showed that installing torpedo tubes on board armoured ships would have been far too expensive). As cruisers became faster, they were integrated into the fleet as scouts. It became important that the British scouts be able to break through an enemy's cruiser screen, and that requirement set up a competition in large cruisers. At the same time, large cruisers could be effective commerce raiders, and any scheme of focal area defense had to provide enough cruiser power to deal with whatever raiders an enemy could produce. The combination of fleet and trade protection demanded a very large fleet of the heaviest and most expensive cruisers.

17. Jon Tetsuro Sumida was the first to point out the way in which finances shaped British naval thinking, in his *In Defence of Naval Supremacy: Financial Limitation, Technological Innovation, and British Naval Policy 1889 – 1914*, Allen and Unwin, London, 1993. That finances dominate more abstract kinds of strategy should be familiar to anyone involved in modern defense programming. However, prior to Dr Sumida's work, accounts of Admiral Fisher's innovations entirely omitted the crucial financial pressure driving the Admiralty, focusing instead on the emerging rivalry with Germany.

18. In theory, the Admiralty explained its battleship program based on a doctrine of superiority over potential enemies, for example that it should have 160 per cent of the battleship strength of Germany. In fact, no such doctrine could be very precise, because it was impossible to calculate the strength of an individual battleship. As the cost of the fleet became increasingly expensive, in 1912-14 First Lord Winston Churchill began to talk about more affordable battleship equivalents, such as submarine and destroyer flotillas. That made perfectly good sense in the context of a battle, since torpedo flotillas could destroy enemy battleships (and the British were well ahead of the Germans in developing long-range torpedoes). The implied shift in policy did not become clear because the outbreak of war in 1914 greatly distorted British building programs. For example, at the outset all orders for ships that would not soon be completed were cancelled. Once large ships could again be ordered, battleship construction was suspended in favour of battlecruisers, and wartime demands for increased capital ship construction generally referred not to German battleship strength but rather to battlecruisers –which had proven far more useful.

19. The report is in three volumes, PRO CAB 7/2, 7/3, and 7/4. Formally, it is the *Report of the Royal Commissioners Appointed to Enquire Into the Defence of British Possessions and Commerce Abroad*. The Carnarvon Commission was appointed in September 1879 because of the Russian war scare of the previous two years. At that time the Russians created a volunteer fleet of liners assigned to commerce raiding, a development that excited considerable interest. It led, for example, to British interest in arranging for wartime conversion of fast liners into armed merchant cruisers. The 1877-78 crises also awakened British interest in the problems of mobilisation, and it indirectly led to creation of elements of the Admiralty staff, including the Naval Intelligence Division, in the next few years. In 1878 a Russian squadron sailed from Europe and was first heard of when it arrived in the United States (CAB 7/3, p. 3); had war broken out this squadron could have gone directly to the Cape of Good Hope, destroying British merchant ships on the way and then seizing the cape itself. In particular, the squadron might have coaled at the cape and then destroyed the coal left over, making it nearly impossible for any pursuing British squadron to operate. Key telegraph lines might well be cut, dramatically reducing intelligence information. The

commission also concluded that, with the advent of steam, blockade was far less effective than in the past. It followed that the fleet had to maintain sufficient forces in distant waters to deal with enemy squadrons there. The report emphasised that whatever was spent on local garrisons and fortifications, they would not be secure without much larger investment in the Royal Navy.

20. See Norman Friedman, *Network-Centric Warfare: How Navies Learned to Fight Smarter in Three World Wars*, Naval Institute Press, Annapolis, 2009. The possibility of vectoring helps explain Fisher's interest in battlecruisers, but there were also other arguments favouring them, and the arguments changed over time. The key point was that Fisher introduced the battlecruiser, which cost far more than previous armoured cruisers, as a replacement capable of killing any existing armoured cruiser. That made no sense as a fiscal measure unless fewer battlecruisers could replace a larger number of armoured cruisers. It appears that Fisher thought that battlecruisers could replace both armoured cruisers and battleships (and that he saw HMS *Dreadnought* as, in effect, a slow battlecruiser, since she was at least as fast as existing armoured cruisers). As Mediterranean Commander in Chief (1899-1902), Fisher became interested in high fleet strategic speed because only a fast fleet could deal with the multiple French and Russian threats he faced, using what amounted to ocean surveillance to meet them at sea. The faster the main body, the faster the scouts running ahead of it had to be. By 1904, the Royal Navy was experimenting with long-range gunfire as a way of avoiding torpedo threats, and the techniques involved required that shooters maintain a steady course and speed. The implication was that a fast ship might be difficult to hit. Further, at the ranges involved, existing heavy guns could penetrate even thick armour, so it was by no means clear that armour or its absence made much of a difference (the Italians had reached much the same conclusion with two fast ships built in the previous century). The situation changed dramatically as gunnery range increased, but the loss of three British battlecruisers at Jutland does not really demonstrate that – the three ships were lost due to remarkably poor magazine practice. The point that remains from all of this is that Fisher's battlecruisers made sense economically only if a smaller number could replace the previous larger number of big armoured cruisers. That in turn had to involve a dramatic change in the way in which British cruisers protected Empire trade, and the only change on offer from 1904 onwards was vectoring based on a kind of ocean surveillance.

21. The key 1909 Imperial Conference is Public Records Office Admiralty Files London 116/1100B. The New Zealand Government offered to buy a battleship for the Royal Navy, which became HMS *New Zealand*, and the state governments of New South Wales and Victoria offered to pay a share of the cost of a battleship. The papers of the 1909 conference include a proposal for an Imperial General Staff and extracts from the proceedings of the 1887, 1897, 1902 and 1907 conferences. The 1887 conference considered, among other things, the naval defence of the Australian (and New Zealand) colonies as its main naval issue. The 1897 conference seems to have been the first to call for colonial contributions to a unified Empire force, both land and sea, as Secretary of State for Colonies Austen Chamberlain pointed to the heavy cost of the gigantic navy and military forces of the United Kingdom. At this time, the Australasian colonies contributed to the costs of a certain number of ships, certain of which would be at the disposal of the Imperial authorities (that is, the Admiralty) but restricted to an area around Australia and, on the outbreak of war, New Zealand. At this time the Cape Colony was about to offer similar support. The Admiralty was unhappy with this arrangement because the ships might well be needed elsewhere once war broke out. At the 1902 conference, Chamberlain pointed out that ordinary naval and military expenditure had increased enormously, mainly due to the need to keep up with other powers, particularly with their navies (this was aside from the extraordinary expenses connected with the Boer War). He pointed out that British expenditure per head was about ten times that in the colonies. The First Sea Lord pointed out that the naval problem was not defence, it was 'simply and absolutely to find out where the ships of the enemy are, to concentrate the greatest possible force where these ships are, and to destroy those ships. That is the only possible method of protecting this Empire from the efforts which other navies may make to damage her commerce or

her territory.' The idea of a fixed naval force in Australian or any other waters had to be discarded; the Empire needed an Empire navy. The First Sea Lord particularly cited recent French action strengthening the French naval force in Eastern waters. At this time, the only fleet agreement in the Empire was the Australasian one. The argument that there was a single sea and therefore that there should be a single Imperial fleet was reiterated at the 1907 Conference. As long as the Admiralty could maintain unity of direction and command, it was willing to support the formation of local navies. At this time Australia wanted the 1902 agreement (subsidising the Australasian squadron) ended in favour of the creation of a RAN.

22. President Dwight D Eisenhower well understood this point, and on this basis, he drastically cut the US Army (and repeatedly threatened nuclear war if the Soviets seized West Berlin). The successor Kennedy Administration was much affected by army arguments that it needed some alternative to the nuclear threat, and on that basis, it rebuilt the army – but it can also be argued that this administration was interested in limited war in Southeast Asia, and that it needed a rebuilt army to fight there. For an extended discussion of US vs European views of defence during the Cold War, see Norman Friedman, *The Fifty Year War: Conflict and Strategy in the Cold War*, Naval Institute Press, Annapolis, 2000.

13 Commonwealth Naval Cooperation: Are we ready for the next 100 Years?

George Galdorisi, Darren Sutton and Stephanie Hszieh

Commonwealth navies have an enviable record of cooperation that is, arguably, unequalled in naval history. This tradition of cooperation and coordination has enabled these navies to operate together nearly seamlessly for a century, including both world wars where they demonstrated, often in cooperation with other navies such as those of the United States. The ability to achieve complete mastery of the sea enabled the defeat of the enemy and hastened the end of both wars.

Today, globalisation and the presence of a new generation of threats on the high seas, the littorals, and the near-shore land areas, demands even closer cooperation between and among Commonwealth navies and other navies they seek to partner with. However, like globalisation, rapid advances in technology, especially the C4ISR technologies, that link these navies together, present a challenge that must be reckoned with if these navies seek to achieve the interoperability necessary to operate together seamlessly at sea in peace and war.

The rich maritime traditions shared by Commonwealth navies and those navies they will most likely partner with suggest that policy or doctrinal differences that might impede seamless interoperability between and among these navies can be readily overcome. What is less certain is whether the technological challenges of linking navies that all pursue different paths for technology development, insertion, and refresh can be successfully dealt with. Challenges these navies have had working together at sea, especially over the last decade, suggest these technical issues have yet to be successfully dealt with.

When asked what single event was most helpful in developing the theory of relativity, Alert Einstein reportedly answered, 'Figuring out how to think about the problem.' In his keynote address at the fifth biennial King-Hall Naval History Conference, Professor Nicholas Rodger of Exeter University identified just *what* these navies must 'think about' when he noted:

> Most think that bigger, faster, and more is best when talking about providing technology to naval forces. But this is not always the case. What matters is not how *much* you communicate, but rather getting the right information to the right people at the right time.

We contend the rapid advance of technology over the years has made naval coalition communications more, not less, challenging. As naval networks have emerged as the primary means of communications within forces of advanced navies, the very technology that has helped each navy communicate between and among forces *within* that navy, has *impeded* effective communications with forces of other navies.

We will provide specific examples demonstrating how this problem of naval communications has become exacerbated over the past decade to the point where the effectiveness of naval coalition partnerships is in jeopardy. We will then present a case study of a model of effective technological cooperation between and among the five AUSCANNZUKUS (Australia, Canada, New Zealand, the United Kingdom and the United States), nations that are helping overcome these technological challenges. Finally, we will show how this model can be extrapolated to other naval coalitions that can ensure the *next* 100 years of Commonwealth naval cooperation and global maritime partnering are as effective as the past 100 years have been.

Background

> Naval History and its analysis is an important subject that helps alleviate the tyranny of limited experience. Only by studying history can we properly understand our own strengths and weaknesses and those of our friends and enemies.[1]
>
> <div align="right">Vice Admiral Russ Shalders, RAN</div>

> Australia's defence policy ... entails the maintenance of alliances and international defence relationships that enhance our own security and allows us to work with others when we need to pool our resources ... this defence policy means that we must have the capacity to lead military coalitions where we have shared strategic interests at stake with others ... and make tailored contributions to military coalitions where we share wider strategic interests with others.[2]
>
> <div align="right">*Defending Australia in the Asia Pacific Century: Force 2030*</div>

These two statements, by then Australian Chief of Navy, Vice Admiral Russ Shalders, RAN, at the 2007 King-Hall Naval History Conference, and by the now former Australian Defence Minister Joel Fitzgibbon in the Executive Summary to the 2009 Defence White Paper, emphasise the importance of looking backwards throughout history to draw upon lessons learned and on looking forward to develop a vision for the defence of the Australian nation. Concurrently, they also validate the importance of coalition operations both from an historical perspective and as a reality in a globalised world.

Mapped against the theme of the 2009 King-Hall Naval History Conference, these statements strongly suggest the importance of drawing on the lessons of 100 years of cooperation between and among Commonwealth navies, as well as with their close allies such as the US Navy. Extrapolating these rich lessons learned, one gains an understanding of how today and tomorrow's Commonwealth navies and their close allies can operate together to achieve mutual goals in peace and in war.

Commonwealth naval cooperation over the past century is universally recognised as the most successful international grouping of its type and is a model for what has evolved over the past several years into what we now call the Global Maritime Partnership. In 2006, Admiral Shalders announced the adoption of the global maritime partnership concept as one that would best represent the way the RAN will likely operate in the future.[3]

However, like globalisation, rapid advances in technology, especially the C4ISR technologies, that link these navies together, present a challenge that must be reckoned with if these navies seek to achieve the interoperability necessary to operate together seamlessly at sea in peace and war. As pointed out by Dr Chris Rahman in *The Global Maritime Partnership Initiative: Implications for the Royal Australian Navy*:

> To function effectively, the 1000-ship Navy (the precursor name for the Global Maritime Partnership) will not only require high levels of international political support to foster the necessary levels of cooperation, but also will be heavily technologically dependent.[4]

The need for effective C4ISR systems as critical enablers for the RAN, a navy that will participate in coalition naval operations as the norm, not the exception, was highlighted in *Future Maritime Operating Concept – 2025: Maritime Force Projection and Control*, which noted:

> The effectiveness of the maritime force can be improved through information and decision superiority [quantity and speed] ... C2 [command and control] systems must be able to deliver superior battlespace awareness and management through decision speed and quality thus controlling operational tempo ... The maritime force must also develop a high level of interoperability with likely coalition maritime forces and future architectures must provide a cohesive and comprehensive system through NCW [Network Centric Warfare] to achieve complete battlespace awareness and control.[5]

The rich maritime traditions shared by Commonwealth navies and the navies they will most likely partner with suggest that policy or doctrinal differences that might impede seamless interoperability between and among these navies can be readily overcome. What is less certain is whether the technological challenges of linking navies that pursue different paths of technology development, insertion, and refresh can be successfully dealt with. The continuing challenges these navies have in working together at sea, especially over the last decade, suggest that solutions to these technical issues remain elusive.

However, today, with the ADF on the brink of what is arguably the most substantial naval investment and upgrades in a generation, naval forces have an opportunity to achieve seamless interoperability with coalition partners as part of the global maritime partnership.[6] *Plan Blue 2006*, the RAN's strategic assessment shaping the future of the navy puts the requirement in stark terms:

> The Future Navy must be able to exchange C2 and targeting information within a joint and coalition environment. The Future Navy must possess the Command, Control, Communications, Computers (C4) capabilities required to maintain interoperability with coalition forces in the future. This is particularly the case when operating with US forces.[7]

At issue is the question: can Australia, its defence force, and, most specifically, the navy learn from the past 100 years of Commonwealth naval cooperation and use these lessons learned to ensure the RAN spearheads the *next* 100 years of Commonwealth naval cooperation and global maritime partnering and make the next century of naval cooperation as effective as the past 100 years have been? A corollary of which is the question: can the technology meet the challenge? Some think it cannot. This paper postures it can.

Perspective

> When John Fisher became First Sea Lord in 1904, his main pledge was to solve this intractable problem … Fisher in effect invented picture-based warfare. He created a pair of war rooms in the Admiralty, one built around a world (trade) map, the other around a North Sea map.[8]
>
> Dr Norman Friedman

The rich history of Commonwealth naval cooperation over the past century has an equally rich history of networking at sea, enabled by such innovative practices as First Sea Lord John Fisher's use of 'picture based' warfare at the beginning of the last century, and further spurred by the exigencies of the two global wars of the past century, wars where naval forces played a dominant role. Commonwealth navies and their close allies such as the US Navy readily, and even eagerly, adopted new technologies that helped these navies coordinate their efforts at sea.

However, as Nicholas Rodger points out, it is *how* this technology is applied that determines not only how effective it is, but often, whether coalition forces face victory or defeat. For example, as nations, and especially navies, adopted new technologies, they found that often the technological promise of a new system was accompanied by unintended consequences that sometimes made the net result a negative rather than a positive.

As one especially significant example, the introduction of the telegraph, promised instantaneous communications across vast distances. No longer would messages take months to traverse continents as telegraph cables and networks made it possible for messages to be relayed in days. The Royal Navy (RN) found the telegraph to be an important tool in communicating with its global fleet, but that ease and speed of communications came with a price. During times of tension, fleet commanders were often found on their command ship docked at port in order to have access to telegraph messages rather than out at sea with their ships.[9]

However, the telegraph, a breakthrough technology that all assumed would 'cure' a universe of communications ills had another downside and 'unintended consequences' of its use.[10] Prior to the invention of the telegraph, expatriates at the far end of the British Empire received the news regarding events transpiring in the British Isles via bundles of newspapers that were delivered via sailing vessel. This typically took anywhere from four to six weeks but when the news arrived it was robust, detailed, and provided the reader with virtually all they could want to know about these events.

The Victorians eagerly embraced the telegraph as something that was 'faster and better' than waiting for newspapers to arrive via ship and something that would provide them the 'news of the home islands' instantly and without the multi-week time delay. However, this new technology had a downside: telegraph transmissions were expensive, so those putting together telegraph messages placed a premium on brevity and 'news' was truncated to the essentials. Additionally, transmissions were sent from one way station to the next where one operator had to manually key in what he or she had just received, a process that was fraught with error – and was doubly chancy since not all operators at these way stations spoke English. The net result was that when the news finally arrived it was truncated, error prone and often bore little resemblance to the initial information that was transmitted.[11]

The advent of wireless technology also brought the promise of better and speedier communications between command and fleets at sea. Navies were no longer bound by land locked telegraph cables, and signals could reach out into the vast expanse of the sea allowing for central command to better track their forces. This centralised control allowed for better vectoring of fleets based on a centralided information system, but also made it harder for fleet commanders to manage their ships. Professor Rodger tells of an incident in 1942 when the commander of the RN Home Fleet, Admiral John Tovey, RN, asked the Admiralty to take command of his ships as he had lost track of them while at sea.[12]

Like the telegraph, wireless had a huge downside, another 'unintended consequence' of new technology. While this wireless technology helped commanders reach far flung units and communicate in real time, *enemy* units could also copy these same transmissions and thus gain the tactical advantage over the forces communicating

via this wireless technology. History is replete with examples of navies and other forces suffering defeat because the enemy intercepted wireless communications. Clearly, none of this 'downside' was anticipated when the new technology was initially developed and placed on naval units.

Naval forces today, particularly Commonwealth navies, have embraced current communication technologies like the internet and satellite communications to maintain situational awareness and track their fleets. However, much like the RN in the days of the telegraph and wireless communications, Commonwealth navies must today deal with the challenges posed by these new technologies. The challenge now is how can these navies, which are committed to effectively network at sea, ensure that their substantial investment in C4ISR technologies result in more, not less, interoperability? To understand the challenges, as well as the opportunities, facing Commonwealth navies for their next 100 years of naval cooperation, we must first understand how well these navies are able to interoperate *today*.

Naval Coalition Networking: How Big a Challenge?

Is there a place for small navies in network-centric warfare? Will they be able to make any sort of contribution in multinational naval operations of the future? Or will they be relegated to the sidelines, undertaking the most menial of tasks, encouraged to stay out of the way – or stay at home … The 'need for speed' in network-centric operations places the whole notion of multinational operations at risk.[13]

Professor Paul Mitchell

The thorniest issue is to what extent participants are expected to contribute to the timely sharing of information to be used for the identification, monitoring, disruption or interdiction of illegal activities … Each nation can be expected, for example, to have clearly defined rules for releasing information about intelligence platform capabilities.[14]

Lieutenant Commander Chris Watson, RAN

Clearly, the available evidence suggests that like minded peace loving nations, especially the Commonwealth navies and their likely coalition partners, recognise the importance of coalition networking and that naval operators of all nations, the men and women 'on-point' in this effort, recognise it perhaps more so than others.

As the headquarters, acquisition and operational staffs of Commonwealth navies work to ensure their sailors can communicate seamlessly at sea, understanding the challenges to effective networking between and among navies, especially navies at different stages of technological development, is key to developing the right technical solutions. Looking to examples in the navies we represent, and

extrapolating these examples to Commonwealth navies and their likely coalition partners, is an important first step in this process.

From the RAN's perspective, *Australian Maritime Doctrine* is clear in describing the challenges of greater interoperability among naval forces, noting:

> Interoperability can never be assumed and requires substantial and sustained effort to achieve common doctrine, common procedures and common communications. The greater the commonality in equipment and methods achieved, the less duplication of resources and the fewer delays in achieving operational results when nations come together in contingencies.[15]

From the US Navy's perspective, at the very pinnacle of the US military, this notion is articulated perhaps most clearly in *The National Military Strategy*, which notes:

> Achieving shared situational awareness with allies and partners will require compatible information systems and security processes that protect sensitive information without degrading the ability of multinational partners to operate effectively with US elements.[16]

How important is coalition networking and what is the 'state of play' of this networking today, especially when US Navy combat formations attempt to communicate and share data with Commonwealth navies and other coalition partners and achieve 'shared situational awareness?'[17] Some would say that it is not yet where it should be. As Professor Mitchell, Director of Academics at the Canadian Forces College, noted in his article in the authoritative *Naval War College Review*, absent more effective means to network and exchange data, navies may even stop attempting to operate together.[18] He raises what is perhaps the most important question regarding coalition naval communications, what level of communications and networking is required to make coalition operations at sea effective.

Professor Mitchell did not ask this question as an aside. For a number of years the Canadian navy has deployed a surface combatant with US Navy carrier strike groups (CSGs) for an extended six-month deployment. This was an environment where the effectiveness of coalition interoperability moved from theory to the reality of high tempo, forward deployed naval operations - and operations that often involved combat. As part of his research, Professor Mitchell interviewed the commanding officers of each Canadian ship that deployed with a CSG to determine how effectively they were able to communicate with their US Navy partners. The results indicated that while significant progress has been made, more work needs to be done.

As Professor Mitchell noted in his article, the experience of these Canadian commanding officers, as well as the experience of others working with US naval forces in NATO exercises or operations, was that the 'need for speed' in network-centric operations may result in the exclusion of even close allies. Thus, he notes, while the

guiding principle of network centric warfare is to increase the speed and efficiency of operations, coalitions are rarely concerned about combat efficiency. Rather, they are always about scarcity in terms of operational resources, political legitimacy, or both. This led him to conclude that in a dynamic coalition environment, because of the impact of slower networks or non-networked ships, the prospects of the US Navy keeping 'in step' with Commonwealth navies as well as with other likely coalition partners, is not high, absent enlightened efforts by all governments concerned.[19]

At a 2002 international C4ISR symposium, Professor Mitchell put it more directly when he said during the question and answer period following his presentation:

> We have been trying to work with the US Navy for a long time. Ten years ago when we basically communicated by the red phone (tactical voice nets) we did all right because it was pretty much a level playing field. Five years ago, with Challenge Athena [an at sea communications service] and the beginnings of networked communications, it started to become more difficult for us as the US Navy sped away from its partners. Today, with IT-21 [information technology for the 21st century] and the emerging FORCEnet, the US Navy is in danger of leaving behind other navies because all of the background and decision making that goes on over networks like SIPRNET [secret internet protocol router network] is lost to us, thus, when the order is given to do something we have none of the background for it and we are not in the battle rhythm of the operation.[20]

While some might say this is merely anecdotal information, for these authors and our colleagues from other navies, especially Commonwealth navies, the situation Professor Mitchell describes represents the reality of current coalition operations at sea and indicates that there is important work yet to be done. Additionally, this is consistent with what proponents of network-centric operations have been espousing for some time. In a capstone publication of the US Department of Defense Office of Force Transformation, the late Vice Admiral Arthur Cebrowski, USN, considered by some to be the 'father of network-centric warfare,' stated:

> The United States wants its partners to be as interoperable as possible. Not being interoperable means you are not on the net, so you are not in a position to derive power from the information age.[21]

If this is such an important issue then why have naval professionals not worked harder and more vigorously to solve it and why have we not found a solution yet? Part of the problem lies in the relative success that navies have had networking at sea. Even in the days of signal flags, ships at sea found a way to communicate to some degree. As technology advanced from flashing lights, to radio Morse code, to tactical radio voice circuits, to the initial tactical data links, ships at sea often had it better than forces ashore on expanded battlefields. The fact that 'we've

communicated at sea in the past and we're doing so today,' often obscures how well we could communicate and exchange data if the right technology, doctrine, tactics, techniques, and procedures were in place.

For the US Navy, one of the most likely partners of Commonwealth navies today and in the future, there is another complicating factor. Almost all officers who attain high rank in the US Navy have served as CSG commanders at some time during their career, typically as their first afloat assignment as flag officers. As a commander embarked in a *Nimitz* class aircraft carrier, the admiral has experienced the 'best of the best' in the area of communications and data exchange capabilities, with robust displays, ample switching and routing capabilities, and high bandwidth.

Additionally, from the US Navy perspective, with respect to communicating and exchanging data with coalition partners, coalition nets such as CENTRIXS (combined enterprise regional information exchange system) are likely to be installed on the aircraft carrier and that is also where coalition naval officers embark for most exercises. Thus, as CSG commanders mature through policy and acquisition assignments, their collective memory of coalition communications and data exchange capabilities is often quite positive: they do not have the first person knowledge of any problems associated with their operational experience. However, their experience is the exception, not the rule, for they have not experienced coalition networking from the position of coalition surface combatants attempting to work with US Navy ships.

Beyond the particular case of US Navy flag officers whose operational background may have obscured genuine challenges to effective coalition networking, there is another, perhaps more important, reason that an effective solution still eludes the operators who want to solve this issue. For a host of reasons, coalition interoperability does not fit neatly into any requirements 'bin' for Commonwealth navies, for the US Navy or for other likely coalition partner navies. It does not fly, float, or operate beneath the seas. It does not strike the enemy from afar like cruise missiles. It does not enhance readiness like spare parts or training. It just does not always have the requisite degree of high level advocacy.

This is not to imply that those in charge of setting requirements or acquiring weapons systems are not keen on doing the right thing, as clearly they are. However, defining operational needs, the requirements generation process, and acquisition practices have grown up over decades, even generations, and changing these processes to adequately factor in coalition communications takes a great deal of time and attention. As yet, it is a journey that is incomplete.

Part of the reason for this lack of advocacy and difficulty in reorienting requirements and acquisition practice is the inability to quantify the 'goodness' derived from coalition networking. With naval establishments and acquisition bureaucracies increasingly driven by the rules of the marketplace, measures of effectiveness, return on investment and best business practices, the lack of measures to quantify

the benefits derived from effective coalition networking auger against spending scarce research and development, and especially acquisition, dollars to enhance something that has not yet been effectively quantified.

However, it is a process that must take place if Commonwealth navies and their likely coalition partners are to operate at sea effectively for next century. Serendipitously, the Commonwealth military establishments, as well as that of the United States, have well, developed military laboratory organisations able to work on coalition networking challenges and also have well-developed processes for dealing with sister laboratories among the five AUSCANNZUKUS nations. Given the technological challenges of effectively networking these diverse navies, the military laboratories of these five nations must pursue this as a matter of priority.

Tell It to the Labs

> The DSTO [Defence Science and Technology Organisation] mission covers the full spectrum of science and technology support for Defence … The DSTO will continue a significant portion of research into forward-looking enabling technologies such as hypersonics, computer security, electro-optics and smart materials which impact future Defence capability.[22]

> *Defending Australia in the Asia Pacific Century: Force 2030*

> We will win – or lose – the next series of wars in our nation's laboratories.[23]

> Admiral James Stavridis, USN

For Commonwealth navies, especially when working with the US Navy, the technical challenges to effectively network are not trivial. Specifically, when working with a 21st century FORCEnet-centric US Navy and attempting to leverage the enormous capital investment the US Navy is making in FORCEnet, the challenge is twofold. First, quantifying the operational effectiveness of a coalition force networked via US Navy infrastructure provided by FORCEnet, versus the operational effectiveness of a coalition force less robustly networked, and secondly, finding a way for likely coalition partners to co-evolve maritime networking systems in a way that enables maximum networking among partner ships and other platforms.[24]

The issue of co-evolution is an important one because for Commonwealth navies determined to work together with other, often smaller, navies as global maritime *partners*. A cooperative arrangement regarding technology development is crucial.[25] This implies early and frequent cooperation and collaboration at the grassroots level

by scientists and engineers working in laboratories of Commonwealth navies as well as those of other prospective global maritime partners to come up with technical solutions for challenging networking problems.

Government defence laboratories in the Commonwealth nations and in the United States are ideally positioned to lead the effort to co-evolve C4ISR capabilities that will enable their navies to effectively network at sea. There are many reasons why these defence laboratories should lead this effort, and collectively, they strongly auger for increased reliance on the Defence Science and Technology Organisation laboratories and their Commonwealth and US sister laboratories to lead this important effort.

Primarily is wealth of talent in these laboratories. Government defence professionals have been at the forefront of developing *today's* C4ISR systems and thus have the talent and the pedigree to lead this effort in the future. Second, these government defence laboratories are not motivated by profit margins or meeting stockholder expectations, so they serve as 'honest brokers' in tailoring solutions to the navies they support. This is especially important in developing, fielding and supporting C4ISR systems. While ships, submarines, and aircraft are built by a discrete number of companies, virtually every large contractor will say that they are in the business of providing C4ISR solutions, and they are, but far too often there is a wide chasm between the solution they want to provide and the needs of the navies concerned.

The mandate for government defence laboratories to lead the development of C4ISR capabilities for their respective navies and help co-evolve these systems for the five AUSCANNZUKUS nations is strong in each of these nations, and raises the bar for what these laboratories are expected to accomplish. For example, in a discussion involving defence science and technology, *Defending Australia in the Asia Pacific Century: Force 2030* notes:

> This allows Australia to work with these nations [the five AUSCANNZUKUS nations] across a broad spectrum of defence science and technology issues, to explore potential technological opportunities at significantly less cost to Australia, and to benefit from tests and trials using a range of methods and environmental conditions where the cost would be otherwise prohibitive.[26]

With this as a mandate, it is important to examine just how these government defence laboratories spread across five nations and three continents can effectively work together to ensure that their navies can network seamlessly for the next 100 years.

Out of the Labs: Achieving Coalition Networking

> The ADF must continue the transition to a force with fully integrated services that is interoperable with other agencies of government and its coalition partners and allies ... The future force will need assured access to other agency, coalition, and open source information capabilities ... We have a strong record of meeting the challenges of interagency and coalition operations, both as a leader and a participant. The future will present more challenges in this regard.[27]
>
> *Joint Operations for the 21st Century*

> In today's world, nothing significant can get done outside of a coalition context, but we have been *humbled* by the challenges of devising effective coalition communications.[28]
>
> Dr David Alberts

Few would argue that the challenges to achieving effective networking at sea and to devising and co-evolving C4ISR systems for navies, even navies with such similar traditions, platforms and technologies as the five AUSCANNZUKUS nations, are simple to solve or demand anything less than a concerted effort on the part of government defence laboratories to work together to address these challenges.

However, the scientists and engineers working in these government defence laboratories also recognise that the ways and means for them to work with their colleagues in other nations must be well developed and robust enough to ensure a coordinated effort. A primary means for accomplishing this work is through bilateral agreements between two nations in the form of defence exchange agreements or information exchange agreements.

At the principal researcher level up through the leadership levels of these laboratories, scientists and engineers are keen to use these bilateral agreements to facilitate their work with their fellow scientists and engineers in laboratories in the other AUSCANNZUKUS nations. However, the task of devising an agreement and then getting it approved through a substantial review chain in the respective nations involved is not a trivial task. We have first person experience working these agreements in our respective laboratories and know forging these agreements is a time-consuming process and the time lag in conjuring up the need for an agreement and having it approved and 'in place' is often substantial. Once complete, these agreements are most often between just two nations.

Fortunately for AUSCANNZUKUS nations, recognising the shared interests these five nations have, as well as the somewhat limiting nature of bilateral exchange agreements, the respective governments have put in place a network of agreements that enable liberal exchanges of scientific and engineering information at the laboratory level. This network of agreements is captured

in a not well known publication called *The Beginners Guide to the Technical Cooperation Program* which provides further links that explains the purpose and construct of each of these organisations in more detail.[29] While a full description of the work of these groups is beyond the scope of this paper, a listing of these groups is provided below:

- ASIC: Air and Space Interoperability Council (Australia, Canada, New Zealand, United Kingdom, United States) – focused on aerospace interoperability.

- ABCA: American, British, Canadian, and Australian Armies (Australia, Canada, United Kingdom, United States) – focused on Army interoperability.

- AUSCANNZUKUS – focused on naval command, control, communications, and computers.

- CCEB: Combined Communications Electronics Board (Australia, Canada, New Zealand, United Kingdom, United States) – focused on military command, control and communications.

- MIC: Multinational Interoperability Council (Australia, Canada, New Zealand, United Kingdom, United States) – focused on military interoperability.

- MIP: Multilateral Interoperability Program (Australia, Canada, United Kingdom, United States) – focused on command, control, and interoperability.

- TTCP: The Technical Cooperation Program (Australia, Canada, New Zealand, United Kingdom, United States) – focused on military science and technology.

Our personal and professional experience, while intersecting and mapping to several of the organisations above, is primarily focused on our years long work on Technical Cooperation Program teams. Understanding how these teams evolved and focused this work in developing a way ahead for effective coalition networking at sea is necessarily preceded by an understanding of The Technical Cooperation Program writ large.

The Technical Cooperation Program

> Our prime multilateral science and technology relationship is through The Technical Cooperation Program with the United States, United Kingdom, Canada and New Zealand.[30]
>
> *Defending Australia in the Asia Pacific Century: Force 2030*

Although it has been around in various forms for almost half a century, TTCP is not universally well known, even by Commonwealth naval personnel, and some background is in order to explain how this program facilitates efforts to address coalition interoperability. Importantly, while conducting this sort of analysis in other forum is certainly *possible*, the extant TTCP organisation and infrastructure provides a ready made medium that makes success in these multinational collaborative endeavours *probable*.

TTCP is a forum for defence science and technology collaboration between Australia, Canada, New Zealand, the United Kingdom and the United States. It is the largest collaborative defence science and technology activity in the world. The statistics alone give some indication of the scope of this effort: 5 nations involved, 11 technology and systems groups formed, 80 technical panels and action groups running, 170 organisations involved, and 1200 scientists and engineers directly accessed. By any measure, TTCP is a broad based effort that tremendously facilitates science and technology cooperation among the five member nations.

On 25 October 1957, the US President and the British Prime Minister made a Declaration of Common Purpose containing the following:

> The arrangements which the nations of the free world have made for collective defense and mutual help are based on the recognition that the concept of national self-sufficiency is now out of date. The countries of the free world are inter-dependent and only in genuine partnership, by combining their resources and sharing tasks in many fields, can progress and safety be found. For our part we have agreed that our two countries will henceforth act in accordance with this principle.[31]

Immediately afterward, the Canadian Government subscribed to this principle of interdependence and joined in the common effort. The resulting organisation was called the Tripartite Technical Cooperation Program. As a result, the World War II era Combined Policy Committee was reconstituted and the Subcommittee on Non-Atomic Military Research and Development (NAMRAD) was established. It comprised the heads of defence research and development organisations in Canada, the United Kingdom and the United States. Australia joined the NAMRAD Subcommittee in 1965, and New Zealand joined in 1969, at which point the organisation governed by the subcommittee was renamed TTCP.

The aim of this program is to foster cooperation within the science and technology areas needed for conventional (that is, non-atomic) national defence. The purpose is to enhance national defence and reduce costs. To do this, TTCP provides a formal framework that scientists and technologists can use to share information amongst one another in a streamlined manner. As noted in *Defending Australia in the Asia Pacific Century: Force 2030,* TTCP is the *prime* multilateral science and technology relationship used by the ADF.[32]

Collaboration within the program provides a means of acquainting the participating nations with each other's defence research and development programs so that each national program may be adjusted and planned in cognisance of the efforts of the other nations. This process avoids unnecessary duplication among the national programs, promotes concerted action and joint research to identify and close important gaps in the collective technology base, and provides nations with the best technical information available.

TTCP has its centre of gravity in the applied research domain, but it also encompasses basic research and technology development activities. The scope includes the exploration of alternative concepts prior to development of specific weapon systems, collaborative research, sharing of data, equipment, material and facilities, joint trials and exercises, and advanced technology demonstrations. Cooperation within the program often acts as the catalyst for project-specific collaborations further down the equipment acquisition path.

The program consists of three levels and thus has a streamlined hierarchy that promotes five-nation cooperation. Level one is the strategic policy level and comprises three groups of personnel: the principals; the deputies; and the secretariat. Each nation has one representative to each of these groups, with the exception that the Australian deputy also acts as the New Zealand deputy. The Principals make up the NAMRAD Subcommittee. The deputies and secretariat are all based in Washington DC, and collectively form the Washington staff.

Level two is the program planning and oversight level and currently contains 11 groups, each focused on a particular technology or systems area. The groups have an executive chair (appointed from any one of the nations), up to five national representatives, and a number of technical advisors. Finally, each group has one deputy assigned to act as its group counsellor, who works with the group to help communicate the principals' strategic direction. The groups are: Aerospace Systems; Command, Control, Communications and Information Systems; Chemical, Biological and Radiological Defence; Electronic Warfare Systems; Human Resources and Performance; Joint Systems and Analysis; Land Systems; Maritime Systems; Materials and Process Technologies; Sensors; and Conventional Weapons Technology.

Level three contains bodies that sit under each group and actually perform the collaborative activities. There are three types: the semi-permanent technical panels; the temporary action groups; and the project specific project arrangements. Technical panels are designed to manage a continuing program of work and will generally oversee a number of subordinate activities. Action groups are initiated to investigate a specific issue and, on completion, will recommend if and how any further work on the subject should be undertaken on a more permanent basis. Project arrangements are a more binding form of cooperation, used to support a specific project or collaboration.

Technical panels and action groups have a chair, plus national leaders for each participating nation and a varying number of team members. Not all nations participate in all technical panels or action groups. The majority of personnel involved in TTCP operate at or in support of level three. The structure at this level can and should evolve to remain relevant. Groups have the authority to initiate and terminate technical panels and action groups, although the changes must be notified to the principals at their next annual meeting.

TTCP operates by sharing the output from existing national science and technology programs for the greater benefit of the participating nations. It is therefore fundamentally a bottom up organisation, with collaborations occurring only where national programs and a willingness to cooperate already exist. The role of the principals and national representatives in managing TTCP therefore takes two forms: directing collaborations within areas where suitable national programs already exist; and directing their own national programs in order to provide the basis for future TTCP collaborations. TTCP is thus a 'best endeavours' organisation and can only be as good as the underpinning national programs.[33]

Today, TTCP operates under an updated Declaration of Common Purpose that informs the efforts of the organisation's technical panels and action groups. This declaration states:

> No member nation possesses the total resources to provide for its own defence research and development needs. Each must assist the others by sharing resources and tasks in many fields so that all can find progress and security. The aim of TTCP then is to foster such cooperation in the science and technology needed for conventional national defence. The purpose is to enhance national defence at reduced cost.[34]

With this description of TTCP as background, we are ready to understand the work that has been conducted under the auspices of the Maritime Systems Group Action Group 1 Net-Centric Maritime Warfare Study and Action Group 6 FORCEnet Implications for Coalitions. This work goes directly to the issue described in the title of this paper: *Commonwealth Naval Cooperation: Are We Ready for the Next 100 Years?* and reports on the past six plus years of activities and the way ahead for the ongoing research of this group.

One example of Commonwealth labs, plus the United States, finding networking solutions:

> The Technical Cooperation Program ... a longstanding forum for defence science and technology cooperation between Australia, Canada, New Zealand, the United Kingdom and the United States, has, for example, established an initiative to consider the 'FORCEnet Implications for Coalition Partners'.[35]

<div align="right">Dr Chris Rahman</div>

Action Group One Net-Centric Maritime Warfare Study

Much has been written, primarily from a qualitative perspective, about the perceived benefits to the military of transforming from a platform to a network-centric force structure.[36] However, few such studies have taken an analytic view and produced quantitative results, and fewer still have done so in the context of broadly based coalition operations.[37] In response to a mutually perceived need, the five allied countries of TTCP Maritime Systems Group established an Action Group in 2001 to conduct a three-year, October 2001 to September 2004, 'Network Centric Maritime Warfare' collaborative study. The objectives of this study were to provide TTCP Maritime Systems Group, as well as national military customers, with guidance and analysis on the implications of network centric-maritime warfare for coalition maritime force capabilities, C4I interoperability, and to help shape national acquisition strategies.

The terms of reference for action group 1 charged the group to examine and help establish the foundational first principles of force netting from a coalition and distributed systems perspective, and to research the analysis methods needed to quantify the benefits of netting in coalition operations. Armed with the terms of reference, as part of its study definition, action group 1 members consulted with national and international military staffs to determine a priority list of issues to address. Ultimately, the group decided to analyse and quantify the military utility of selected parametric levels of network centric capabilities by addressing tactical information exchange, in rigorous analytical detail, for three selected tactical situations associated with coalition maritime littoral warfare: maritime interception operations, anti-submarine warfare (ASW) and anti-surface warfare (ASUW)/swarm attack.

Action group 1 first met in October 2001 to review and understand the terms of reference and to map out methodology to address the Maritime Systems Group guidance. The group decided that to address the issue of network centric maritime warfare properly, two studies were needed: Study A, a broadly based higher level study addressing overarching network centric maritime warfare analytical issues and 'first principles' of force networking from a coalition and distributed systems perspective; and Study B, an in depth focus on the three tactical situations noted above that, together, represented a spectrum of different types of coalition force maritime tactical situations of high interest to the TTCP nations.

Understanding the *process* of selecting these studies provides insight into the dynamics of international cooperation in science and technology under the auspices of TTCP. Study A, the broad area study, selected operational planning and intelligence, surveillance, and reconnaissance as the area of focus because all five coalition partners participated in them to one extent or another. For Study B, the range of tactical situations to select from was quite extensive. One of the first orders of business for action group 1 was to conduct a survey of coalition contingency operations that occurred most frequently among the member nations. Once this list was compiled and the list of possible tactical situations to examine was narrowed, this candidate list was vetted with uniformed AUSCANNZUKUS professionals from the five member nations. Ultimately, three mission areas, maritime interception operations, ASW and ASUW, specifically against the swarming small boat threat, were selected for study. Additionally, and serendipitously, for each of these warfare areas, the partnership among the five nations was on a more or less equal footing.

While a full report on action group one's efforts and results is beyond the scope of this paper, and releasability issues preclude directly citing many TTCP maritime systems action group one documents, it is instructive to understand the *process* that action group one used to obtain their results in order to have a clear window on this effort and to understand the 'best practices' this group used to inform future efforts of this nature.[38] Significantly, in addition to investing substantial effort to select focus areas where all coalition partners were on an essentially equal footing, the study participants conducted due diligence in order to review and understand the various analysis methodologies available to conduct action group one's work. In fact, one of the action group one's early reports provided an extensive review of analytic techniques appropriate for the group's work, and the contents of this report informed each of the studies undertaken by maritime systems action group one.[39]

Armed with an agreement regarding the studies to be conducted and in possession of a number of analytic techniques that might be appropriate to apply to both Study A and Study B, maritime systems action group one set about addressing the Maritime Systems Group direction expressed in the terms of reference and conducted the two major studies in parallel. Within Study B, maritime interception operations, ASW and ASUW were addressed in that order. Significantly, no one nation provided all of the analytical techniques and tools that were ultimately applied. Rather, for each study, the group drew upon the analytical expertise of each member from a 'nation blind' perspective and ultimately selected the analytical technique most appropriate to the tactical situation at hand. Fortuitously, the operational requirement of the various tactical situations drove the team to select a mix of analytical techniques for the studies, ensuring that the work of the team was not narrowly focused on the preferred analytical methodology of any one nation.

The results of Study A were significant and important to the overall conduct of network-centric maritime warfare and stemmed from the hypothesis that network centric warfare is the core concept for enabling a new revolution in military affairs for the information age. This concept postulated that greatly increased combat power derives from the ability of highly connected system of entities, widely distributed throughout the battlespace dimensions of space, time, force, information, and cognition, to rapidly concentrate influences to deliver decisive effects on an enemy while minimising the exposure of friendly entities.

Importantly from the standpoint of addressing the next 100 years of Commonwealth cooperation, Study A was also based on the proposition that the complexity of the netted force will demand a co-evolution of systems, technology, and doctrine. It also noted that while force experimentation has been adopted as a co-evolution mechanism, it is not feasible to explore the requisite paths by experimentation because attempts to do so yield heuristics that create a risk of misunderstanding the gap between experiment observed and battlespace realised capability. Thus, Study A showed that appropriate analytical methods need to be applied to adequately explore the problem space in a timely, tractable, and affordable manner. Further, it showed that these may be based on systems engineering techniques, but the conceptual description of distributed networked systems and their behaviour requires further development before systems engineering principles can be applied.

Thus, Study A mapped the broad parameters and issues that are addressed in quantitative modelling of network centric warfare. It also showed that conceptualising network centric warfare requires paying much more attention than heretofore to the information and cognitive domains of warfighting, domains that have always been important, but have not had much analytical attention to date. Study A further noted that models of network centric warfare must include representations of information, the manner in which it arises from data generated in the physical domain and its flow around the information domain.[40]

With Study A providing the broad, overarching underpinnings of the work of action group one, the team undertook detailed analysis of the three aforementioned tactical situations (maritime interception operations, ASW and ASUW/swarm). These tactical situations were each carefully designed to strike a balance to enable them to be generic enough to be of general relevance but also specific enough to support and inform each nation's requirements generation process and acquisition programs. This careful sculpting and dimensioning of each tactical situation was a key factor that enhanced Study B's utility to each nation in particular and to the analytical community in general. A full description of these tactical situations and their development is well beyond the scope of this paper, but is part of the body of work maintained by the Command and Control Research Program.[41]

However, as action group one's three-year tenure expired and team leader and Chairman, Ray Christian, reported the team's results to the Maritime Systems Group leadership, an unusual thing happened. These senior leaders, representing all five AUSCANNZUKUS nations, recognised the value of this work and the importance of continuing to study and analyse the issue of networking maritime coalitions. Roughly concurrently, the US Navy decided to make a major capital investment in FORCEnet. Therefore, the Maritime Systems Group leadership directed the stand up of a new action group to focus specifically on the impact of coalition partners, the four Commonwealth nations, working with the US Navy in a FORCEnet environment.

Action Group Six FORCEnet Implications for Coalitions

Action group six took the Maritime Systems Group terms of reference and developed three premises and a hypothesis to inform its work. The first premise, derived from the Naval Network Warfare Command's capstone document, *FORCEnet: A Functional Concept for the 21st Century*, was that FORCEnet will empower warfighters at all levels to execute more effective decision making at an increased tempo, which will result in improved combat effectiveness and mission accomplishment.[42] The second premise, derived directly from the Maritime Systems Group terms of reference, was that the warfighting benefits of FORCEnet in a coalition context can be assessed through analysis and quantified to provide input to national balance of investment studies of the five member nations. The third premise, derived from the aforementioned US Navy Fleet Commanders' top C4ISR priorities, was that it is necessary that FORCEnet address current and near term information system requirements that support operations in the joint and coalition environments. Coalition communications was the clear number one priority of all numbered fleet commanders and is a critical enabler in leveraging coalition partners in the global war on terrorism.

Based on these premises, action group six developed a working hypothesis that has informed its work from the outset. The hypothesis being:

> Conducting modeling and simulation and detailed analysis to demonstrate the enhanced warfighting effectiveness of coalition partners (in this case – the AUSCANNZUKUS nations) netted in a FORCEnet environment can help inform national naval C4ISR acquisition programs.

This not only set the tone for the group's work, but also provided visibility throughout the naval establishments of all five member nations regarding the group's efforts. The compelling nature of this hypothesis has caused other organisations not initially involved in action group six's work to 'jump on board' and join this team.

The full details of action group six's efforts are beyond the scope of this paper. Briefly, a scenario was devised in which coalition partners might likely participate, one that began as humanitarian assistance/disaster relief, then morphed into a counterterrorism effort, and ultimately turned into high tempo conflict at sea. Then,

four principal measures of effectiveness were devised to measure the effectiveness of a robustly networked coalition force that fully leveraged the US Navy's FORCEnet capability over one that was not networked. These were time to capability (number of major amphibious units delivered on time in the area of operations); economy of effort (cost of munitions, fuel and other consumables used in the campaign); risk (blue attrition in all phases of the campaign: assembly; littoral transit; ASW; ASUW; anti-air warfare; offload; naval fire support; and mine warfare); and campaign success (success in the aforementioned campaign phases and ultimately, the safe delivery of 'campaign effectors' the landing force ashore).

Action group six has generated analytical data and conducted modelling and simulation to demonstrate that if the US Navy's FORCEnet is developed in a way that is inclusive of likely coalition partners, who, in turn, build their national systems to be compatible with FORCEnet, the naval forces involved will enjoy a quantum increase in capability. Team members were universal in their agreement that this message needed to be carried forward to the national defence leadership of each of the five nations involved.

Concurrently, the action group six members liberally shared the 'technology on-ramps' of their acquisition communities to find those windows where similar technological capabilities could be inserted into their naval C4ISR systems. By modelling the planned capabilities of these 'on ramps' against the scenario, the impacts and value of alternative coalition network structures was assessed. The resulting analysis was presented to Maritime Action Group principals when the action group six team leader and Chairman, Don Endicott, briefed the team's results to the Maritime Action Group leadership. The study's results are currently being used by action group six members to make detailed C4ISR technology procurement recommendations in their respective countries.

The advantages that can accrue to the world's peace loving nations by leveraging the tremendous investment the US Navy is making in FORCEnet cannot be overstated. Far from a US Navy-only standard, FORCEnet, and especially a currently fielded prototype called Composeable FORCEnet, is a publish and subscribe system based on open architecture and open standards that other nations can leverage with minimal investment.[43] An analogy familiar to most Pacific Rim nations involves Singapore. In 1998, Singapore made an enormous investment in the Singapore ONE project, which provided broadband infrastructure of high capacity networks and switches, with the goal of providing broadband access to the entire nation.[44] Singapore then went out to the international business community and said, in essence, 'Come join us. We have made the investment in building a world class infrastructure. This is a great home for your business.' Attracted by that world class infrastructure, those businesses did come, and Singapore's standing as a hub for international business and as a strong node in the Asian economy is a matter of record.[45] The question action group six raised, and a question that the Maritime Action Group leadership wants addressed by action group six's successor group, action group eleven, is whether FORCEnet can play a similar role in the development of maritime coalition capabilities.

Beyond the strong endorsement by the Maritime Action Group principals to continue the action group one/action group six efforts for another three years, the initial reviews of TTCP maritime action group one/action group six's work within the naval and defence establishments of the five nations has been overwhelmingly positive. Within the US Navy, in particular, one measure of the group's success is the number of organisations, the Office of Naval Research, the Naval War College, the Naval Postgraduate School, and others, who have placed members on and who are vested in the ongoing work of this team because they recognise the importance of its work.

As action group six transitions to action group eleven, TTCP model continues to provide a means for the laboratory communities in the nations that will likely work together at sea to analyse technical communication and networking needs in an operational framework. The application of TTCP model to current and future efforts to build effective coalition communication networks can be an important step in enabling Commonwealth nations to operate and cooperate at sea in this century.

A Way Forward?

> A new idea is first condemned as ridiculous and then dismissed as trivial, until finally, it becomes what everyone knows.
>
> William James, 1879

> The DMO (Defence Material Organisation) maintains a number of relationships with allies and other partner nations in order to ensure that Australia has access to the world's best technologies, systems and capabilities. The DMO uses those relationships to identify interoperability objectives, explore collaborative activities, share data on reciprocal projects, benchmark acquisition and sustainment processes, and streamline technology transfer arrangements.[46]
>
> *Defending Australia in the Asia Pacific Century: Force 2030*

The last 100 years of Commonwealth naval cooperation have resulted in a level of excellence in peace and in war that has set the standard for navies and nations to emulate. The bar has indeed been set high for the next 100 years of Commonwealth naval cooperation, cooperation that now includes the United States as an important partner.

As the AUSCANNZUKUS nations take a leadership role in securing the global commons as part of the nascent Global Maritime Partnership, effective networking among these allied and coalition nations will be an absolute requirement if the navies of these nations are to achieve anything worthwhile beyond just showing up in the same oceanic area at the same time.

This paper has demonstrated that if the five AUSCANNZUKUS nations turn to their defence science and technology organisations as primary stewards of conceiving and fielding compatible C4ISR systems for their respective nations, this will result in the best possible results. This is because these government defence laboratories have a shared responsibility to deliver naval operators of the partner nations the best possible C4ISR systems, and most importantly, systems that are compatible with other AUSCANNZUKUS navies as well as with other likely coalition partners.

Further, this paper has also shown that there are many extant 'five-eyes' organisations and taxonomies that greatly facilitate cooperation among the partner nations. At the science and engineering level, TTCP offers arguably the best forum for this ongoing cooperation. The experience of the TTCP group marine action groups one, six and eleven offers a bedrock and a best practices example as a way ahead to ensure that Commonwealth and AUSCANNZUKUS naval operations in *this* century are the most effective they can possibly be.

Notes

1. Russ Shalders, Speech to the 2007 King Hall Naval History Conference, 26-27 July 2007, Canberra, <www.navy.gov.au/spc>.

2. Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence Publishing Service, Canberra, 2009, pp. 12-13. This Defence White Paper, the first such document issued by the Australian Department of Defence in almost a decade, represents the highest level document describing the way ahead for the ADF.

3. Chris Rahman, *The Global Maritime Partnership Initiative: Implications for the Royal Australian Navy*, Papers in Australian Maritime Affairs No. 24, Sea Power Centre - Australia, Canberra, 2008. Dr Rahman cites an article in the 20 November 2006 edition of *The Australian* as the first formal announcement of the RAN joining the Global Maritime Partnership, though; in fact, Australia had a rich history of participating in such activities regionally and globally.

4. 'A Global Network of Nations for a Free and Secure Maritime Commons', in Report of the Proceedings of the 17th International Seapower Symposium, 19-23 September 2005, <www.nwc.navy.mil/cnws/marstrat/docs/library/ISS17web.pdf >. The present day concept of a global maritime partnership can be traced back to Admiral Mike Mullen's tenure as US Navy Chief of Naval Operations. His original concept of 'The 1000-Ship Navy' – a global navy composed of 1000 or more ships working cooperatively – evolved into the Global Maritime Partnership. Mullen introduced the concept at the 2005 International Seapower Symposium in Newport, RI, stating:

   As we combine our advantages, I envision a thousand-ship navy–a fleet-in-being, if you will–made up of the best capabilities of all freedom-loving navies of the world… This thousand-ship navy would integrate the capabilities of the maritime services to create a fully interoperable force, an international city at sea.

For a discussion of the origins of the Global Maritime Partnership concept see also George Galdorisi & Stephanie Hszieh, 'Speaking the Same Language', *US Naval Institute Proceedings*, vol. 123, no. 3, March, 2008, pp. 56-60. Rahman, *The Global Maritime Partnership Initiative: Implications for the Royal Australian Navy*, p. 6. Dr Rahman writes authoritatively about the technical aspects on naval interoperability, noting; 'Technical impediments to information sharing can embrace a range of factors.' He uses examples of naval exercises held in the Asia-Pacific region such as RIMPAC and CARAT and the experiences of coalition partners such as Australia working with the US Navy Combined Enterprise Regional Exchange System to demonstrate that much technical (as well as policy and security) work remains to be done before coalition navies can communicate and exchange date in a way that facilitates a robust global maritime partnership. See also, Brad Carter and Deb Harlor, 'Combined Operations Wide Area Network (COWAN)/ Combined Enterprise Regional Information Exchange System (CENTRIXS)', *Biennial Review*, Space and Naval Warfare Systems Center San Diego, San Diego, 2003, p. 87, for a detailed technical description of CENTRIXS. See also, Gordon Van Hook, 'How to Kill a Good Idea', *US Naval Institute Proceedings*, vol. 122, no. 10, October 2007, p. 34 for an operational perspective on the CENTRIXS system. Captain Van Hook notes the limitations of CENTRIXS, stating:

> We must move beyond limited approaches to link a few secure common systems with software applications like CENTRIXS, and get to a fully integrated regional picture from ports to harbors and into the commons.

5. Royal Australian Navy, *Future Maritime Operating Concept – 2025: Maritime Force Projection and Control*, Defence Publishing Service, Canberra, 2009, pp. 15-16. This unclassified version of the Future Maritime Operating Concept, co-signed by the Australian Chief of Defence Force and Chief of Navy, represents the vision for how the RAN will operate in the year 2025 and provides a window on what technological capabilities this navy must possess.

6. See, for example, Sea Power Centre – Australia, 'The Navy's New Aegis,' *Semaphore*, Issue 07, May 2009, <www.navy.gov.au/spc>. This issue of *Semaphore* discusses the RAN's impending purchase and fielding of three *Hobart* class destroyers and notes further that the Aegis system; 'is now fitted in almost 100 platforms in five navies.' This strongly suggests the need for the RAN to communicate and seamlessly exchange information with likely coalition partners will grow. See also Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 71 for a description of the capabilities of the DDG as well as 'The Commanders Respond', *US Naval Institute Proceedings*, vol. 124, no. 3, March 2009. In this lead article in the International Navies issue of *Proceedings*, Australian Chief of Navy, Vice Admiral RH Crane, RAN, discusses the planned improvements to the RAN.

7. Royal Australian Navy *Plan Blue 2006*, Defence Publishing Service, Canberra, 2006, pp. 16-17. Not coincidently with respect to the themes of the 2009 King-Hall Naval History Conference, in the Foreword to *Plan Blue 2006* Vice Admiral RE Shalders, RAN, Australian Chief of Navy, notes:

> In considering our future, we must not forget the lessons of our past. The Royal Australian Navy has played a crucial role in securing Australia's national interests at home and aboard for over 100 years.

8. Norman Friedman, 'Netting and Navies, Achieving a Balance', Andrew Forbes (ed) *Sea Power: Challenges Old and New*, Halstead Press, Sydney, 2007, pp. 185-186. This publication provides the proceedings of the 2006 Royal Australian Navy Sea Power Conference. As Dr Friedman points out, Admiral Fisher used the information gleaned from shipping reports and reports from his own fleets to build a tactical picture of where pirates were attacking British merchant ships. Information from these sources was fed into two different war rooms; the first war room tracked ship movements around the world while the second war room tracked ship movements in the North Sea. Armed with this 'picture-based' view of the world, Admiral Fisher was able to direct warships to the spots where British ships were being attacked by pirates. See also, Norman Friedman, *Network-Centric Warfare: How Navies Learned to Fight Smarter through Three World Wars*, Naval Institute Press, Annapolis, 2009.

9.   NAM Rodger, Presentation at the 2007 King-Hall Naval History Conference, 26-27 July 2007, Canberra.

10. It is difficult to overstate the importance of the invention of the telegraph. For the first time ever, it was possible to move information faster than people or goods. Therefore, it is not difficult to understand how proponents, as well as users, of the telegraph did not thoughtfully consider the unintended consequences of its use.

11. Rodger, Presentation at the 2007 King-Hall Conference.

12. Rodger, Presentation at the 2007 King-Hall Conference.

13. Paul Mitchell, 'Small Navies and Network-centric Warfare: Is There a Role?', *Naval War College Review*, Spring 2003, pp. 83-99.

14. Chris Watson, 'How Might the World's Navies Contribute to and Benefit from the "1000-Ship Navy" Proposal?', Andrew Forbes (ed), *Australian Maritime Issues 2007: SPC-A Annual*, Papers in Australian Maritime Affairs No. 21, Sea Power Centre – Australia, Canberra, 2008 p. 237. In his Peter Mitchell Essay Competition winning article, Lieutenant Commander Watson highlights the significant issues that come with navies of differing sizes and different agendas achieving effective networking and information sharing.

15. Royal Australain Navy, *Australian Maritime Doctrine*, Sea Power Centre - Australia, Canberra, 2000, p. 106. *Australian Maritime Doctrine* is the RAN's keystone doctrinal publication. It is a guide to understanding what the RAN contributes to Australia's national security.

16. *The National Military Strategy of the United States of America*, US Government Printing Office, Washington DC, 2004.

17. US Navy battle formations are most often deployed as carrier strike groups (CSGs) or as expeditionary strike groups. CSGs are built around a large deck aircraft carrier operating tactical jet aircraft, and expeditionary strike groups are built around a large-deck amphibious ship operating vertical and/or short take-off and landing aircraft and helicopters.

18. Mitchell, 'Small Navies and Network-Centric Warfare', pp. 83-99.

19. Mitchell, 'Small Navies and Network-Centric Warfare', pp. 88-89.

20. Paul Mitchell, 'Small Navies and Network-centric Warfare: Is There a Role? Canada and US Carrier Battlegroup Deployments', Briefing presented at the 8th International Command and Control Research and Technology Symposium, Washington DC, 17-19 June 2003. Professor Mitchell's statement did not come from his prepared presentation, but from the question and answer period following his formal presentation.

21. Department of Defense, *Military Transformation: A Strategic Approach*, Washington DC, 2003, pp. 1-36, <www.oft.osd.mil>. This publication is the capstone publication of the Office of Force Transformation, US Department of Defense.

22. Department of Defence, *Defending Australia in the Asia Pacific Century*, pp. 131-136.

23. James Stavridis, 'Deconstructing War', *US Naval Institute Proceedings*, vol. 120, no. 12, December 2005.

24. For more on FORCEnet see the following: Naval Network Warfare Command, *FORCEnet: A Functional Concept for Command and Control in the 21st Century*, Department of Navy, Norfolk, 2006; and Naval Network Warfare Command, *FORCEnet: A Functional Concept for Command and Control in the 21st Century: Annex Version 20 June 2006*, Department of Navy, Norfolk, 2006 <www.enterprise.spawar.navy.mil/getfile.cfm?contentId=816&type=R>.

25. Van Hook, 'How to Kill a Good Idea', p. 33. Captain Van Hook, drawing on his experience as a destroyer squadron commander where he worked with coalition partners, emphasised the importance of a cooperative approach to instantiating the global maritime partnership, noting that the United States should 'Encourage regional maritime security arrangements to form at the grassroots level, without overt US leadership.'

26. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 136.

27. Department of Defence *Joint Operations for the 21st Century,* Defence Publishing Service, Canberra, 2007, pp. 3, 30-31. This publication provides a window on how the ADF intends to fight in 2030.

28. David Alberts, Opening Remarks at the Annual 7th International Command and Control Research and Technology Symposium, Québec City, Canada, September 2002.

29. The Technical Cooperation Program, *DOC-SEC-3-2005*: *A Beginner's Guide to the Technical Cooperation Program*, 1 September, 2005, <www.dtic.mil/ttcp>. This document published on The Technical Cooperation Program's (TTCP's) public website, is a concise explanation of TTCP's structure and purpose, as well as a useful capture of the purpose of other 'five eyes' organisations.

30. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 136.

31. The Technical Cooperation Program, *A Beginner's Guide*.

32. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 136.

33. The Technical Cooperation Program, *A Beginner's Guide*.

34. The Technical Cooperation Program, *A Beginner's Guide*.

35. Rahman, *The Global Maritime Partnership Initiative*, p. 36.

36. Importantly, some of this qualitative work has addressed coalition operations, confirming the importance of networking in the multi-lateral operations. See, for example, D Gompert, R Kluger & M Libicki, *Mind the Gap: Promoting a Transatlantic Revolution in Military Affairs*, National Defence University Press, Washington DC, 1999; J Thomas, *The Military Challenges of Transatlantic Coalitions*, Adelphi Paper 333, International Institute for Strategic Studies, London, 2000; G Adams, 'Strength in Numbers: The European Allies and American Defence Planning', in Cindy Williams (ed), *Holding the Line: US Defence Alternatives for the Early 21st Century*, MIT Press, Cambridge, 2001; and G Adams, G ben-Ari, J Logsdon & R Williamson, *Bridging the Gap: European C4ISR Capabilities and Transatlantic Interoperability,* Defence and Technology Paper 5, National Defence University Press, Washington DC, 2004. These studies, and others like them, emphasise the importance of coalition operations and, by extension, coalition partners operating in a networked fashion.

37. While little quantitative work on network-centric operations has been done based on from the ground up modelling and simulation, the US Assistant Secretary of Defence for Networks and Information Integration, under the auspices of the Command and Control Research Program, has reviewed the results of both exercises and wartime events to draw some quantitative results regarding the value of networking. Maritime action groups one and six reviewed this Command and Control Research Program material in evaluating 'best practices' for the conduct of their studies, and this program's work informed much of the group's work. See <www.dodccrp.org> to access the totality of the program's effort, including several books that describe these early efforts to quantify the benefits of networking.

38. Some TTCP Maritime action group one's reports, including the final *Network-Centric Maritime Warfare Study Capstone Report* (TR-MAR-12-2004) are labelled 'For Official Use Only' because the document(s) 'Contain information that is provided in confidence to the TTCP Governments.' However, some of these reports do allow for unlimited distribution. Due to the focused outreach efforts by Maritime action group one, the results of the team's work were reported in open venues such as the International Command and Control Research and Technology Symposia.

39. I Grivell, G Jackson & M Britton, *A Review of Analytic Techniques Applicable to the Study of Network Centric Warfare,* TTCP TR-MAR-9-2003, May 2003.

40. Chris Davis et al, *Key Issues in Coalition Network-Centric Maritime Warfare*, TTCP TR-MAR-10-2003, January 2004.

41. See George Galdorisi & Darren Sutton, 'A Technical Approach to Coalition Interoperability', Paper Presented at the 11th International Command and Control Research and Technology Symposium, Cambridge, September 2006, <www.dodccrp.org>. See also M Hazen, R Burton, R Klingbeil, K Sullivan, M Fewell, I Grivell, C Philp & P Marland, 'The Analysis of Network-Centric Maritime

Interception Operations (MIO) Using Queuing Theory', Presentation at the 8th International Command and Control Research and Technology Symposium, Washington DC, 17-19 June 2003; Ralph Klingbeil, J Shannon & G Galdorisi, 'Utilizing Network-Enabled Command and Control Concepts to Enhance ASW Effectiveness,' Presentation at the 9th International Command and Control Research and Technology Symposium, Copenhagen, 14-16 September 2004; and David Galligan, G Galdorisi & P Marland, 'Net Centric Maritime Warfare – Countering a "Swarm" of Fast Inshore Attack Craft', Presentation at the 10th International Command and Control Research and Technology Symposium, McLean, 13-16 June 2005. These three latter papers and briefings are also at: <www.dodccrp.org>.

42. *FORCEnet: A Functional Concept*, <www.enterprise.spawar.navy.mil/getfile.cfm?contentId= 816&type=R>. See also *A Functional Concept for Command and Control in the 21st Century* and *FORCEnet: A Functional Concept for Command and Control in the 21st Century: Annex Version 20 June 2006*. See also, Vern Clark, 'Sea Power 21: Projecting Decisive Joint Capabilities', *US Naval Institute Proceedings*, vol. 128, no. 10, October 2002; and Richard Mayo & John Nathman, 'FORCEnet, Turning Information into Power', *US Naval Institute Proceedings*, vol. 129, no. 2, February 2003.

43. See Jeffrey Clarkson, George Galdorisi, Jeffrey Grossman, Michael Reilley & Christopher Priebe, 'Composeable FORCEnet', in *SSC San Diego Biennial Review 2006*, SPAWAR Systems Center San Diego, San Diego, 2006; David Alberts & Richard Hayes, *Understanding Command and Control*, DoD Command and Control Research Program, Washington DC, 2006; Department of the Navy Chief Information Officer, *Department of the Navy: Information Management and Information Technology Strategic Plan*, Department of Navy, Washington DC, 2006; and George Galdorisi & Jeff Grossman, 'Composeable FORCEnet Command and Control: The Key to Energizing the Global Information Grid to Enable Superior Decision Making', *Proceedings of the 2004 Command and Control Research and Technology Symposium, June 2004*, <www.dodccrp.org>.

44. See, for example, Kim-Song Tan and Sock-Yong Phang, 'From Efficiency-Driven to Innovation-Driven Economic Growth: Perspectives from Singapore', in *World Bank Policy Research Working Paper No. 3569*, <http://ssrn.com/abstract=712623>. See also Michael Kanellos, 'Singapore: One Nation under Wi-Fi,' *c|net news.com*, 28 August 2006, <news.com.com/2100-1039_3-6110189.html> (9 July 2007).

45. Singapore has attracted a number of information technology companies like Hewlett Packard and Motorola who have established a research and development division to team with Singapore companies to develop new networking technologies. Hewlett Packard's Singapore research and development division is working on next generation networking servers and Motorola has teamed with the Singapore Design Centre to work on new mobile equipment designs. See, Intelligent Nation 2015 Steering Committee, *Innovation. Integration. Internationalisation*, June 2006, <www.in2015.sg/pdf/01_iN2015_Main_Report.pdf> (10 July 2007).

46. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 126.