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THE NAVY

THE MAGAZINE OF THE NAVY LEAGUE OF AUSTRALIA

BELT & ROAD: DOES THE STORY MATCH REALITY?

COUNTERING ANTI-SHIP MISSILES

COMMAND DECISIONS DURING THE BATTLE OF THE RIVER PLATE

IN DEFENCE OF OLD NAVY VALUES

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Front cover: The Navy's Here: HMAS ADELAIDE (L01) Operation Bushfire Assist 19-20 off the Coast of Eden (Image Kim Smyth).

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Artist Impression of RAN *Attack-class* Submarine (Image Naval Group).

NEVER LET A GOOD CRISIS GO TO WASTE

In this issue of *The NAVY* there are four topical papers. The first paper by Sholokhov (a pseudonym) considers China's Belt and Road Initiative (BRI), and asks 'does the story match reality?' The paper is one of a number *The NAVY* has recently shared with the UK(RN) *Naval Review*, and is particularly relevant to our neck of the woods. Tying in with the title of the editorial, Sholokhov observes from Sun Tzu: "The greatest victory is that which requires no battle." He suggests that "China is using BRI to avoid that battle, by being prepared to win it with ease". Paper 2 by longstanding contributor Kelvin Curnow deals with the subject of 'Countering Anti-Ship Missiles (AShMs)'. He soberingly concludes, after an analysis of the 2016 Iranian Islamic Revolutionary Guard Corp, Houthi rebel C-802 missile attacks against the US Navy:

> [F]orty-two years on from the attack on the INS EILAT [ex HMS ZEALOT (R39)] the threat to shipping by AShMs remains greater than ever. Only comprehensive countermeasures against AShMs will provide any level of effective defence.

The third paper by another longstanding contributor, H. Morant (also under a pseudonym), is entitled 'In Defence of Old Navy Values' and considers a 2018 report by the Australian Human Rights Commission (AHRC) into the Maritime Warfare (MW) Branch, with regard to MW Officers and female participation. The paper sets out empirical evidence and raises ethical, moral, fiscal, and evidential questions concerning diversity at the potential cost of capability. It does not recommend a return to 'Old Navy' but it does suggest that research/evidence-based decisions need to be taken – and that current crewing models may be found wanting in war:

> warfare remains the ultimate non-Gaussian discriminator, where automation will never cover all eventualities.

The fourth paper, also third placed in the 2019 Essay Competition (professional section) considers 'Command Decisions During the Battle of the River Plate'. This paper ties in with the first three papers, with respect to war and preparation for war and concludes, *inter alia*:

> [Captain Hans] Langsdorf merely reacted to [Rear Admiral Sir Henry]Harwood's moves and then withdrew at a point where he could have dealt the British a decisive defeat. While Langsdorf is rightly remembered for his chivalrous attitude and good treatment of his prisoners, Harwood is largely overshadowed when in fact his planning and conduct of the battle, pursuit and blockade of the GRAF SPEE were exemplary.

Churchill is accredited with the quote "never let a good crisis go to waste". British PM Harold MacMillan is similarly accredited with the quote "events, dear boy, events". Some questions arise, including 'what is a good crisis, what makes a bad crisis, whether events create crises, or a crisis is an event?' Judged by the recent 'Bush Fire Crisis' and the emerging 'Corona/ COVID-19 pandemic' we are living through eventful even interesting times. As in the old English (attributed Chinese) curse "may you live in interesting Times".

The observation made by Morant that "warfare remains the ultimate non-Gaussian discriminator" is salutatory. It is quite possible that non-Gaussian discriminators extend also to competitive sports, other areas of comparative gender advantages, and to the bio-controls necessary to fight bugs such as COVID-19. This leads back to command, and leadership and Harwood's Nelsonian like insistence that:

> his command teams "planned and rehearsed …tactics in advance…to ensure…subordinates knew exactly what he expected from them".

A "good crisis" may be something that can be dealt with, within the capabilities and capacity of an organisation and its all-important existential power-lines. For politicians, this means focussing on the current term of office – hoping that the crisis is containable within that timeframe, and that the amnesiac memory of voters stays with them. This is a big-hope in a society that increasingly disbelieves authority, instead relying/acting upon multi media-driven superstitions and newsbytes for its facts. Recent high-profile suicides driven, apparently, through throw-away tweets that assume ethical virtue over basic humanity, and panic-buying of basics in

Artist Impression of *Hunter-class* Frigate (Image BAE Systems).

Artist Impression of *Arafura-class* Offshore Patrol Vessel (Image Defence).

response to COVID-19, may be examples of event-driven crises, or events making underlying crises worse.

The growing response to cyber-bullying – also as a result of the enormous baronial-type power of the media-tech giants that is threatening all reporting, including established presses, TV stations, local magazines, and publications such as *The NAVY* – is to exert yet more control. These controls invariably transfer more power to excluding, extra-judicial authorities and quangos that consume bandwidth, power and time – acting to further reduce trusts in the wider democratically accountable institutions of Government, including Defence. When a "real crisis" occurs, the trusts fundamental to leadership (and command) are no longer capable of exerting the empirical controls necessary to affect moral, timely and efficacious relief. For example, when bugs such as methicillin-resistant Staphylococcus aureus (MRSA) take hold in hospitals, it is primarily an indication of the collapse in local leadership and management. Leaders are no longer capable of exerting the basic bio-controls necessary to contain and prevent the spread of a relatively simple bug. The initial emergence of COVID-19 in Wuhan, and the disgraceful handling of those brave Chinese Doctors attempting to tell truth to power – some of whom have now died of the disease – exposes the deceits and distrusts implicit within the CCP, at least provincially. Despite apparently impressive, post-vector containment of the disease, disinformation and blaming others means the virus like the truth is out.

The Navy potentially has three emerging crises that are vulnerable to events:

1. The *Attack-Class* Submarine build programme;
2. Crewing today, and in the future;
3. Growing Navy capability today, for an increasingly uncertain and unstable near tomorrow.

The Australian relationship with the U.S. remains empirically paramount, see also NLA Statement of Policy (p. 5). As *The NAVY* has set out on a number of occasions, this relationship has to be based on trusts: the U.S. trusting in Australia to defend itself as far and for so long as is reasonably practicable. And Australia being able to effectively support the wider defense of the U.S. By not over-promising, and delivering more, Australia is generally seen to have upheld its side of the bargain.

The problem today is the near-tomorrow. The 2016 Defence White Paper is now taken to have identified events occurring in the 2035 timeframe, which are on us today. The previous editorial called 2020 a "Hinge Year", a year in which decisions will need to be taken if Australia is to deliver by 2025/26. This remains the case. Growth in Navy occurring in the mid-2030s is likely to be too late. This means that the *Attack-class* submarine, for all its virtues and strengths, is delivering after time.

The same can be said of the *Hunter-class* (due to deliver between 2029 and 2035) and even the *Arafura-class* (due to deliver between 2021 and 2026). Long procurements offer themselves up to becoming event-driven crises necessary, for example, to enable ministers to capture some of their 15 minutes. For the *Attack-class*, what is a non-nuclear Plan B? – see Flash Traffic. It should necessarily be a local design, probably more boat-hull than tear-drop, and based on modular designs suited to Australian thinking and the on/ offshore mining industry? On Nuclear, the question remains 'why not?' – as Chief of Navy apparently got into political deep-water asking at Pacific 2019. Nuclear is the only realistic driver for a tear-drop hull, and expansion of Australia's waterway network; development of remote communities/mining; and meeting 2050 Carbon targets – without industrially, agriculturally, militarily and economically immolating ourselves.

The *Arafura-class* is not going to entirely replace the existing *Armidale-class* – by application, design, and numbers. There is still going to be a need for a smaller class of Patrol Boats and additional Mine Counter-Measure Vessels to augment the Fleet – and grow commanders of the future. The RAN may need to urgently reconsider indigenous designs, available through versatile modularisation, today – to fill tomorrow's warship/ submarine gap. The same, critically, is the case for crewing. RAN probably needs to grow its crews at twice the rate they are currently being recruited – and retained. As argued by Morant, this does mean designing an "affordable and sustainable [workforce] that will allow the force to grow as a whole without offsetting variety and capability for diversity". It also means strategically thinking ahead to avoid event-driven crises. And building trusts, rather than shooting messengers every time politically imposed aspirations fail the test of empirical reality and the Emperor is called out. ■

STATEMENT OF POLICY

CURRENT AS AT 1 APRIL 2020

For the maintenance of the Maritime wellbeing of the nation.

The Navy League is intent upon keeping before the Australian people the fact that we are a maritime nation and that a strong Navy and capable maritime industry are elements of our national wellbeing and vital to the freedom of Australia. The League seeks to promote Defence self-reliance by actively supporting defence manufacturing, research, cyberspace, shipping, transport and other relevant industries.

Through geographical necessity Australia's prosperity, strength, and safety depend to a great extent upon the security of the surrounding seas and island areas, and on unrestricted seaborne trade.

The strategic background to Australia's security is changing and in many respects has become much less certain following increasing tensions, particularly in East Asia involving major powers, and in Europe and the Middle East. The League believes that Australia should rapidly increase the capability to defend itself, paying particular attention to maritime defence.

The Navy League:

- Believes Australia can be defended against attack by other than a major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space around us and to contribute to defending essential lines of sea and air communication with our allies.
- Supports a continuing strong alliance with the US.
- Supports close relationships with all nations in our general area particularly New Zealand, PNG and the South Pacific island States.
- Advocates the acquisition of the most capable modern armaments, surveillance systems and sensors to ensure technological advantage over forces in our general area.
- Advocates a strong deterrent element in the ADF enabling powerful retaliation at significant distances from our shores.
- Believes the ADF must be capable of protecting commercial shipping both within Australian waters and beyond, in conjunction with allies.
- Endorses the development of the capability for the patrol and surveillance of all of Australia's ocean areas, its island territories and the Southern Ocean.
- Advocates Government initiatives for rebuilding an Australian commercial fleet capable of supporting the ADF and the carriage of essential cargoes to and from Australia in times of conflict.
- Notes the Government intention to increase maritime preparedness and gradually increase defence expenditure to 2% of GDP, while recommending that this target should be increased to 3%.
- Urges the strength and capabilities of the Army (including particularly the Army Reserve) and Air Force be enhanced, and the weaponry, intelligence, surveillance, reconnaissance, cyberspace and electronic capabilities of the ADF be increased, including an expansion in its UAV capability.

As to the RAN, the League, while noting vital national peacetime tasks conducted by Navy, including border protection, flag showing/diplomacy, disaster relief, maritime rescue, hydrography and aid to the civil power:

- Supports the maintenance of a Navy capable of effective action in hostilities and advocates a build-up of the fleet and its afloat support elements to ensure that, in conjunction with the RAAF, this can be sustained against any force which could be deployed in our area of strategic interest.
- Considers that the level of both the offensive and defensive capabilities of the RAN should be strengthened, in particular with a further increase in the number of new proposed replacement frigates and offshore patrol vessels, noting the need to ensure essential fuel and other supplies, and the many other essential maritime tasks.
- Recommends bringing forward the start date of the replacement frigate program to both strengthen the RAN and mitigate the local industry capability gap.
- Recommends the timely replacement and increase in numbers of the current mine-countermeasure force.
- Strongly supports the early acquisition of large, long range and endurance, fast submarines and notes the deterrent value, reliability and huge operational advantages of nuclear powered submarines and their value in training anti-submarine forces.
- The League is concerned at the very long time before the projected 12 new conventional submarines can enter operational service, noting very serious tensions in the NW Pacific involving major maritime powers.
- Recommends very early action to provide a submarine base on the Eastern seaboard.
- Notes the potential combat effectiveness and flexibility of the STOVL version of the Joint Strike Fighter (F35 Lightning II) and supports further examination of its application within the ADF.
- Supports the development of Australia's defence industry, including strong research and design organisations capable of the construction and maintenance of all warships, submarines and support vessels in the Navy's order of battle, and welcomes the Government decision to provide a stable and continuous shipbuilding program.
- Advocates the retention in maintained reserve of operationally capable ships that are required to be paid off for resource or other economic reasons.
- Supports a strong and identifiable Naval Reserve and Australian Navy Cadets organisation.
- Advocates urgent Government research and action to remedy the reported serious naval recruiting and retention problem.

The League:

- Calls for a bipartisan political approach to national defence with a commitment to a steady long-term build-up in Australia's defence capability including the required industrial infrastructure.
- Believes that, given leadership by successive governments, Australia can defend itself in the longer term, within acceptable financial, economic and manpower parameters.

The South Window in The Hall of Memory (Image AMM).

The Navy's Here - Army Vehicles disembarking HMAS ADELAIDE (L01) during Operation Bushfire Assist 19-20 (Image POIS Tom Gibson).

THE NAVY CONTRIBUTION TO NATIONAL CRISES

It is with great sadness that I reflect on the terrible devastation across many parts of Australia this last summer. I hope this edition of The NAVY finds all of our members and readers well and with homes and communities intact, though I am concerned this is unlikely.

While as the Navy League we are not in the business of providing direct support in the aftermath of these type of events, where we are in a position to help, we will do what we can. Should there be members or readers who are in need of help please let us know. We'll do what we can to direct you to the appropriate support. Also, if you know of any member or reader who has been affected by the fires and needs help, again, let us know. We can direct you to services and perhaps even the support of the collegiality of a Navy League State Division meeting. It may just be a great chance to reconnect with the League and like-minded folk, subject to ongoing requirements regarding preventing the spread of COVID-19.

What good does come of the terrible summer is a demonstration of all of the positive attributes that make up the Australian psyche. *Honour, honesty, courage, integrity, loyalty*; signature values of the Royal Australian Navy, but also on display during times of crisis. As well, those "quintessential qualities displayed by Australians in war and on operations, manifestations of the Australian character", outlined in the Hall of Memory at the heart of The Australian War Memorial in Canberra:

- Resource,
- Candour,
- Devotion,
- Curiosity,
- Independence,
- Comradeship,
- Ancestry,
- Patriotism,
- Chivalry,
- Loyalty,
- Coolness,
- Control,
- Audacity,
- Endurance,
- Decision.

These are all values that are traditionally associated with military service, though shine through across the community in times of crisis. While some of these concepts, in some areas of contemporary society, are often easily targeted as being a little out of vogue, they resonate and are enduring and are highlighted in such times. In the summer past, one of crisis, it was these very values and attributes which brought us together as a nation; mateship, support and a shared concern for our 'shipmates'.

Furthermore, the versatility and flexibility of the Defence team and Navy in particular has been on proud display since our last edition. While the fires across Australia have had devastating and long-lasting impacts, it is the proud service of Navy that has been prominent throughout. The period has seen the Army establish a joint task force to coordinate the effort in Victoria and the ships and aircraft of the RAN rescuing Australians trapped by bushfire, as well as bringing food, water and medical help to towns in danger and those overwhelmed in New South Wales and Victoria.

Well done to all involved and especially to the Defence contribution.

The deployment of HMAS CHOULES demonstrated the flexibility of our amphibious landing capability and our Navy's aircraft, including the Blackhawks and Taipan helicopters, were able to assist the overall effort across a vast operational area. The deployment of HMAS ADELAIDE also put the nation's amphibious capability to local benefit and the use of Navy personnel with local knowledge contributed to the success of the operations.

It was impressive as an observer to witness the coordination between federal and state governments in responding to this threat. This largely cooperative approach of governments was refreshing and provides a template for reflection as an example of the bi-partisanship the Navy League seeks to promote in all issues of Defence policy and planning and is a core tenet of our Statement of Policy.

COMMITMENT IN OUR FUTURE

The efforts of the RAN in the past summer is a credit to our Navy's leadership and personnel. It is proof also that our national defence investment is paying off and a reminder that the League's proposition that defence expenditure should be increased over time should be kept front of mind with our political leaders. It is also an important reminder that future capability decisions should be made not in light of what we need today, but what we may need in a variety of, sometimes unlikely, scenarios. Who knows what surprises the future may bring and it is up to organisations like ours to ensure that the maintenance and maritime wellbeing of the nation is secure.

In the days ahead, it seems that the nation will be confronted with more troubling times with the impacts of the coronavirus and the requirements for its containment. We are sure that Defence stands ready to respond, though the use of the Navy in these emergency responses is commendable it is important to ensure that such operations do not diminish its prime operational capabilities or distract from the core Defence role – to deter those who would do us harm.

A RAN MH-60R Seahawk Romeo Helicopter disembarks HMAS ADELAIDE during Operation Bushfire Assist 19-20 (Image ABIS Thomas Sawtell).

IN THIS ISSUE

As always, this issue brings you a host of compelling reading.

I trust you will enjoy the articles in this second 2020 edition and, as always, encourage your feedback.

I also encourage you to spread the word. Once you have finished reading the articles, why not loan your copy to a friend, drop it in at the local surgery or salon and encourage others to join the debate. Even sign a friend up to a subscription as a gift. Keeping before the Australian people the fact that we are a maritime nation and that a strong Navy and capable maritime industry are elements of our national wellbeing and vital to our freedom is one of our overarching objectives, so please consider how you can do your bit for promoting your League.

Happy reading. ■

LETTERS

OBITUARY

Vale LCDR John Bird RNR LM

LCDR John Bird was involved with maritime affairs for many years, commencing with service in the Royal Navy and its reserves from 1942 until 1960. During that time, he also became a qualified architect.

His first contact with the Navy League dates from 1948 when he launched the Training Ship Endeavour in Bristol, a new unit of the Navy League Sea Cadet Corps (NLSCC).

Later, John was the Founding Secretary of the Northland Division of the Navy League of New Zealand.

He brought his family to Australia in 1970 and immediately joined the Navy League of Australia.

John became State President of the Victorian branch for 16 years, from 1976 until 1992 and he was Federal Vice President for more than 25 years.

He was also member of the Defence Committee when it was active in the 1980s.

LCDR Bird wrote many papers, mainly on maritime defence, that were published in The Navy magazine the Naval Officers Club Newsletter, the Melbourne Press and via the Returned Services League.

He will be sorely missed.

Lynda Gilbert
Honorary Secretary
Navy League of Australia Victoria Tasmania Division

Dear Editor

It seems to me that the most important statement recently is from Aeneas, *Crows Nest* Vol 81 No 2 and No 3, ...the 2+12 option: "build the first two Attack submarines in France in the early 20s, during which time, knowledge sovereignty and sovereign capability is transferred to Australia", in what Flash Traffic in the [Dec] edition describes as 'the increasingly unhappy, poorly led, long term, Attack class submarine building program.'

Aeneas also suggests that the surface combatants are too big, the wrong design, too expensive, and take too long to build. (as above). The Baird's mentioned the same in *The NAVY* vol 79 No 4, that 'with our grossly expensive, late delivered, sitting ducks of LHD's, AWD's, and cruiser/frigates, given the availability of comparatively cheap, Mach 3 plus capable sea skimming anti-ship missiles, we need more eggs in more baskets.' Then we have the same theme in 'emergence of zombie fleets' by *The NAVY* [Defence Correspondent] Robert Cuthbert Blake... The obvious question is, WHAT type of combatants, and Navy, should Australia have for the future? (or the ADF as a whole?)

Yours
E Zelley, Victoria

BY EDITOR

Dear Katina,

Thank you for your ongoing correspondence – we are eagerly looking forward to your article exploring the same, which (the Editorial Board feel) will contribute significantly to the current debate.

Kind regards
Editorial Board

BELT & ROAD: DOES THE STORY MATCH REALITY?

By Sholokhov

This paper first appeared in the Naval Review (Vol 108, Issue 1, Feb 20), the membership-only Journal of the Royal Navy and Royal Marines, formed in 1913, and is republished in *The NAVY* by the kind permission of the Editor (Rear Admiral Bruce Williams CBE RN (Rtd.) and Author. **For a project of such size and status, China's Belt and Road Initiative (BRI) is remarkably undefined. Even its birth date is arguable. China's 'Going Out' strategy was launched in 1999 [1], in order to move China forward from being an investee to an investor. A part of this strategy was aimed at reducing risks to China's energy import route through the Indian Ocean by investing in port infrastructure to support naval power projection – a strategy that came to be known in the west as the String of Pearls. Meanwhile, China was developing the concept of a new Silk Road to deepen logistics links westwards to Europe, this emerged formally as One Belt One Road in 2013, which morphed into the BRI in 2016.**

INTRODUCTION

Over these 20 years BRI has spread from ports to roads to rail to ships to energy to trade to investment to international development loans, and less obviously to China's aspiration for the Yuan (¥) to become a dominant currency, so diversifying China's asset risk away from US Treasuries and the US Dollar. It would therefore take a brave commentator to set BRI's definition in stone, but it requires less courage to take a close look at the numbers behind BRI's façade in order to understand its real objectives. Is BRI a geopolitical play, or a way of keeping China's domestic GDP growth machine motoring, or just about earning attractive returns on capital?

BRI's current public pitch is pleasingly simple – in May 2017, President Xi Jinping described it as a "project of the century … that will benefit people across the world", going on to note the importance of "mutual learning and mutual benefit." So far so simple (and so generous). Xi went on to say that reducing obstacles to trade – with infrastructure investments and the removal of financial bottlenecks – would benefit "all participants". These announcements saw BRI developing from a slightly amorphous collection of ideas into a hard strategy – enshrined in the Communist Party of China's (CPC) constitution in late 2017.

So much for motherhood and apple pie. This paper looks at the numbers and draws some conclusions. Here is a preview - the story and the reality do not quite join up. BRI's numbers reveal a pattern of contradictions, between an internationalist trade plan formulated by a protectionist authoritarian government, between financial returns and strategic returns, and between BRI's headline numbers (trillions of dollars) and its actual deals.

NOT AS LARGE AS IT LOOKS?

BRI is long on PR but short on hard details, particularly financial details. The most commonly touted number is around $890bn, although larger numbers have also been circulated (the highest I've seen to date is a modest $8tr). In May 2017 the vice chairman of the National Development and Reform Commission (NDRC), Ning Jizhe, was quoted saying the spending plans would reach $120-130bn per year over the next five years, roughly equal to a WWII Marshall Plan every year.

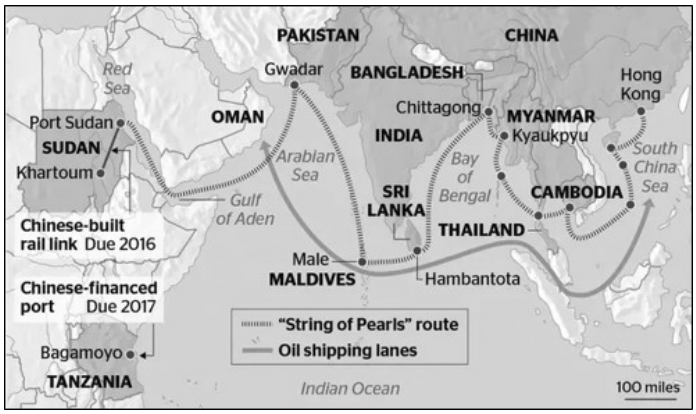
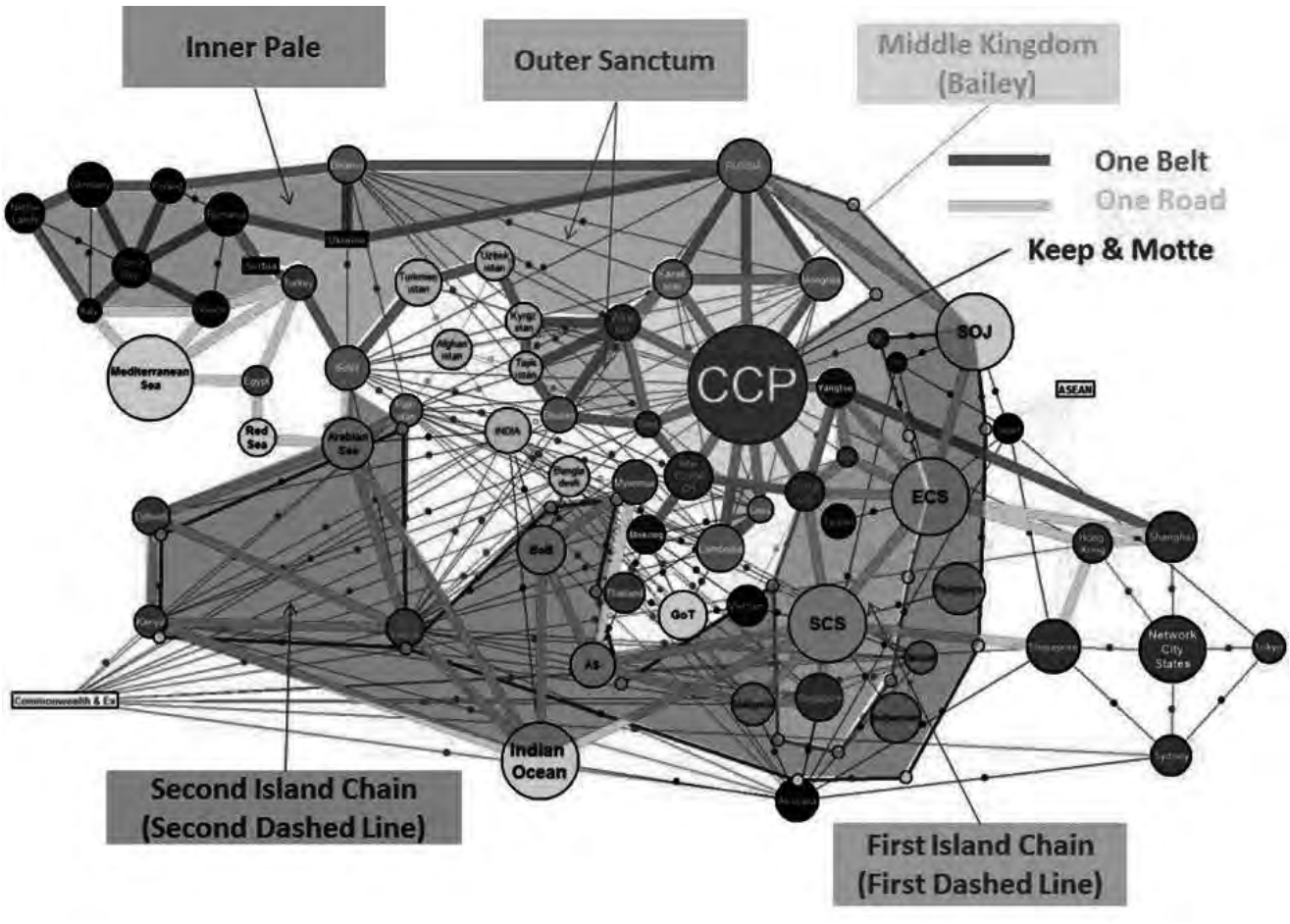


Fig 1. China's String of Pearls.

All signs indicate this will not happen. According to the Ministry of Commerce, BRI investment in 59 countries reached only $14.36bn in 2017, a shade lower than 2016's $14.53bn and 2015's $14.82bn. These amounts are small compared with investments by the World Bank ($61bn in 2017) and by the International Bank for Reconstruction and Development ($22.6bn).

Future numbers look larger. Total contracts signed along the BRI routes reached $144.32bn in 2017, though naturally those sums will take some ten years to spend. Perhaps Ning's number is a 'planned total', while I am interested in 'actual spends.' President Xi, speaking at a BRI forum in Beijing in May 2017, announced that China would contribute an additional ¥100bn ($15.7bn) to the Silk Road Fund, while calling for domestic Chinese financial institutions to add ¥300bn ($47.2bn). The China Development Bank and Export-Import Bank of China also established special lending schemes to focus on BRI infrastructure and capacity, worth ¥250bn ($39.3 billion) and ¥130bn ($20.4bn) respectively. These are consistent with my lower 'annual' interpretation, while happening nearly to add up to something close to the 'headline contract' number. If all those commitments were delivered they would total $123bn. So, to deliver on those headlines, BRI would either need to attract large amounts of foreign capital, which will be looking for projects with economic returns, not political ones, or Beijing would have to increase its budget deficit.



A Networked Middle Kingdom with the Chinese Communist Party at its centre – reflecting the New Silk Road of China's Belt and Road with important hubs. To right the Network City States of Hong Kong; Shanghai; Tokyo; Singapore and Sydney (Quo Vadis *The NAVY* Apr-Jun 2018).

BRI's financial headlines are rarely situated within the facts of Beijing's budget structure, perhaps because that reveals an uncomfortable truth. In 2017 Beijing's budget receipts totalled $2,670bn (real dollars, not PPP ones), and its expenditure was $3,146bn. The gap – 4.4% of GDP – is unlikely to be a comfortable one and is under pressure from a noisy queue of other domestic agendas, all probably more pressing than BRI.

That may be why Beijing has tried to dress BRI in commercial clothing and invited other parties to help finance it. If that pitch worked Beijing could fund its plans with other people's cash while distracting observers from BRI's geopolitical qualities. It hasn't. Enthusiasm for BRI among foreign investors and lenders has been muted. Even the Asian Infrastructure Investment Bank (AIIB), based in Beijing with $97bn in committed capital and 30.34% owned by China, has made no visible commitments to BRI projects. To date the multilateral bank's largest borrower has actually been India, which has received just over $1bn worth of loans, from a total book of $4.3bn. Beijing may have hoped that the AIIB would become a captive source of cash for BRI but so far, anyway, AIIB's investment criteria (plain old financial sustainability, environmental responsibility and local support) have not led to any BRI-branded projects entering its portfolio.

WORDS ARE CHEAP

In a May 2017 meeting the World Bank and five other multilateral lenders committed to supporting the BRI plan, but little action has resulted. Indeed, a number of high-profile financial organisations are visibly pushing back against BRI as it appears to be a catalyst for excessive borrowing by poor economies. In May 2018 Takehiko Nakao (head of the Asia Development Bank's) said "we should look at debt sustainability issues very seriously" while warning that countries were at risk of over-borrowing for infrastructure developments. Christine Lagarde echoed Nakao in Beijing in April 2018, describing a "problematic increase in debt … creating balance of payments challenges". A Center for Global Development debt study highlighted eight countries at particular risk from foreign debt commitments - Pakistan, Djibouti, Maldives, Laos, Mongolia, Montenegro, Tajikistan and Kyrgyzstan. Most of these are BRI targets.

Western banks have expressed interest in working on BRI opportunities, but actual deals remain in short supply. One exception is Standard Chartered, which announced a $20bn commitment to BRI financing in December 2017. The bank's existing footprint is dominated by countries falling within the BRI framework. The pledge looks like a strong commitment to China's project, but it is not a contractual obligation, and might be easily forgotten down the line. Equally 'possible' are Standard Chartered's deals with Ant Financial and China Development Bank, the latter of which has committed to provide ¥10bn ($1.6bn) to Standard Chartered to finance BRI projects, but probably only if they happen. Citigroup too has joined the 'possible' party, with an MoU with Chinese banks in April 2018 and work as the external co-ordinator for Bank of China's BRI bonds, raising $10bn from international markets. Of course, that risk is on Bank of China, not on its related and possible projects.

China's PLAN Carrier Task Group Patrols the South China Sea 2019.

Road and Belt Development along China's South East Coast.

The larger numbers being thrown around the BRI narrative would need many more such deals. In the meantime, though, it is hard to escape the conclusion that BRI's financial PR has run well ahead of reality, and the projects in view are already showing signs that they are less commercial than they ought to be.

One example is the Hambantota port, in Sri Lanka, built by Chinese companies and paid for with approximately $1.2bn in BRI loans from Beijing (at an interest rate of 6.3%). Since completion the port has under-performed and was clearly surplus to commercial requirements from the beginning. Hambantota's cost forms only a small part of Sri Lanka's foreign debt, estimated by the Central Bank at $65bn (in February 2018 Sri Lanka's auditor general made the extraordinary announcement that he was unable to provide a total number for public debt, owing to concealed loans). Debt interest is estimated to cost around half of total government revenues of $12bn, with repayments accounting for much of the other half. It is not a surprise, then, that Colombo agreed to a 99-year lease to state-owned China Merchants Port Holdings in July 2017, in exchange for a $1.1bn of debt forgiveness. In December 2017, as the transfer was completed, the Sri Lankan parliament sweetened the deal with a number of tax concessions for Hambantota, including a (possibly) 32-year income tax holiday.

Hambantota port appears to offer very little chance of earning a reasonable, or indeed any, rate of return on its $1 billion cost, but it offers a very obvious geopolitical return – as a future logistics facility to support People's Liberation Army Navy (PLAN) operations in the Indian Ocean. Sri Lanka is playing down this potential with both US and Indian audiences, and a Chinese request for a submarine visit in 2017 was rejected by Sri Lanka, but the reality is that when Beijing decides to use Hambantota as a naval base there will be little that Colombo – or Washington or New Delhi – can do. Beijing will doubtless sweeten the pill with more debt reschedulings as military facilities are developed.

PORT DEVELOPMENT

China's enthusiasm for port development flows from a quite reasonable concern. China will be an oil and LNG importer for at least the next 50 years, and at least half of those oil imports and a significant part of its LNG imports will come from Africa and the Persian Gulf, carried by tankers past the long coastline of one of China's principal geopolitical opponents (India) and under the watchful eyes of another (the US Navy and its allies). China's security challenge is how to protect this jugular hydrocarbon vein from pressure, or even outright attack.

The sea route from the Persian Gulf to China's east coast totals 10,000 km. While current naval technology can project power to control or maintain sea access in short bursts at great distances from logistics bases, sustained power projection rests on having logistics bases much nearer at hand – in round terms within 1,000 kms of the water-space that is to be controlled.

Without a string of logistics bases between the Persian Gulf and China that reality would leave 90% of China's hydrocarbon import route vulnerable to sustained interdiction, which rather limits China's ability to impose its will on economies and states everywhere. All navies live with the same challenge, but the US and Allied navies benefit from a portfolio of logistics bases built up in a web of alliances and leases since 1945. China is now playing naval catchup.

An early move (pre-BRI, and one that passed with little comment among possible opponents) was the construction of the Myanmar oil pipeline. This cuts 4,000 km out of the sea route, and bypasses the vulnerable choke points created by the Malacca and Lombok straits. But the pipeline is a palliative, not a cure. Whichever way you look at the problem, China still has to worry about thousands of kilometres of sea routes used by its hydrocarbon imports. There is only one way in which China can be sure of protecting those against a sustained threat, and that is by securing its own logistics bases along the route. A quick look at the map shows how Hambantota fits into this picture (Fig 1). Hambantota fills a large gap in naval coverage south and east of India. There is no other location which can serve the same purpose within China's reach. The Maldives, Kyaupku in Myanmar and Gwadar in Pakistan complete the chain of logistics coverage. With these bases in place, in any circumstances short of open warfare against a major power, China's maritime import routes become secure from interdiction.

It is no surprise that we can now see Beijing beginning to exercise the PLAN in the conduct of operations far from home. In 2011 the frigate Xuzhou was despatched to support evacuation of Chinese workers from Libya, and in 2015 two destroyers supported by an oiler evacuated citizens from Yemen to China's base at Djibouti. In 2018 a much larger amphibious task group made highly visible moves towards supporting Beijing's ally President Yameen of the Maldives, where China has also built a $1bn airport and connecting bridge. This process of naval deployment is being made in small steps with a view to minimising opposition at each step, but it is no less real and visible for that. BRI is a useful commercial wrapper with which to distract opposition.

BRI SHORE-SIDE – GAS PIPELINES

Moving ashore, BRI is not just about ports and power projection. The BRI's 'Belt' covers rail lines and gas pipelines into Eurasia and beyond. Gas pipelines connecting China with central Asia and Myanmar are focused on supporting (and de-risking) China's switch from coal to gas, by giving Beijing negotiating power to counter that of the handful of major LNG suppliers who would otherwise hold the trump cards in China's gas-import game. Here, again, financial returns on the actual investment (in pipelines) are thin, but the geopolitical returns are large.

China's economy has historically been powered by coal, providing cheap energy (in round terms, at 2 cents per kWh across the board). But coal has brought severe urban air pollution (which Beijing sees as a worrying spur to political opposition) and is now also incompatible with carbon emissions targets. When urban populations were small and politically compliant air quality mattered less, but now, with more than half of China's population living in cities, this is no longer the case. The Communist Party of China accepts that it must deliver clean urban air to preserve domestic peace (and acceptance of its rule). Hence, the State Council is working towards trebling gas' share of the energy mix, in part by 'gasifying' urban heat and power.

But does the gas strategy make pipelines profitable? With Turkmen gas arriving in China at Khorgos at around $5.5 per MMBTU (1.9 cents per raw kWh, converting to 3.3 cents per delivered electric kWh) it is plain that there is not a lot of margin to support a high return on investment for the Trans-Asian Gas Pipeline (TAGP). TAGP's returns will also be undermined by low capacity utilisation when it finds itself being used primarily as a stick with which to beat down LNG prices. BRI's gas pipeline strategy appears not to be aimed at financial returns but at a combination of energy security and enhanced price-bargaining power against major LNG producers such as Qatar and Cheniere.

Beijing has used BRI as a cover-all for investments that are some considerable distance away from central Asia – including Russia's Arctic Yamal LNG project. When US sanctions arrived after Russia's annexation of Crimea, they included Yamal's investor Novatek, via its shareholder Gennady Timchenko. In late 2015 the Silk Road Fund stepped into the gap, taking a 9.9% stake for $1.3bn. The Fund also provided a $871m 15-year loan. China Development Bank and Exim Bank followed, with two 15-year facilities for a combined $13.5bn at rates around 3.3% over EURIBOR [2] and SHIBOR. [3] China also stepped up to finance six ice-capable LNG carriers, at a cost of $1.6 billion. With production and liquefaction costs of around $3 per MMBTU (1 cent per raw kWh) this part of BRI, at least, looks more commercial, but still appears to contain a substantial geopolitical component – a combination of reducing China's energy import risks and offering very large financial and political support to Russia.

China Development Bank signed another memorandum of understanding in November 2017 on the Arctic LNG 2 scheme, which may begin producing by the end of 2023, suggesting further deals to come.

MORE SHORE-SIDE - RAILWAYS

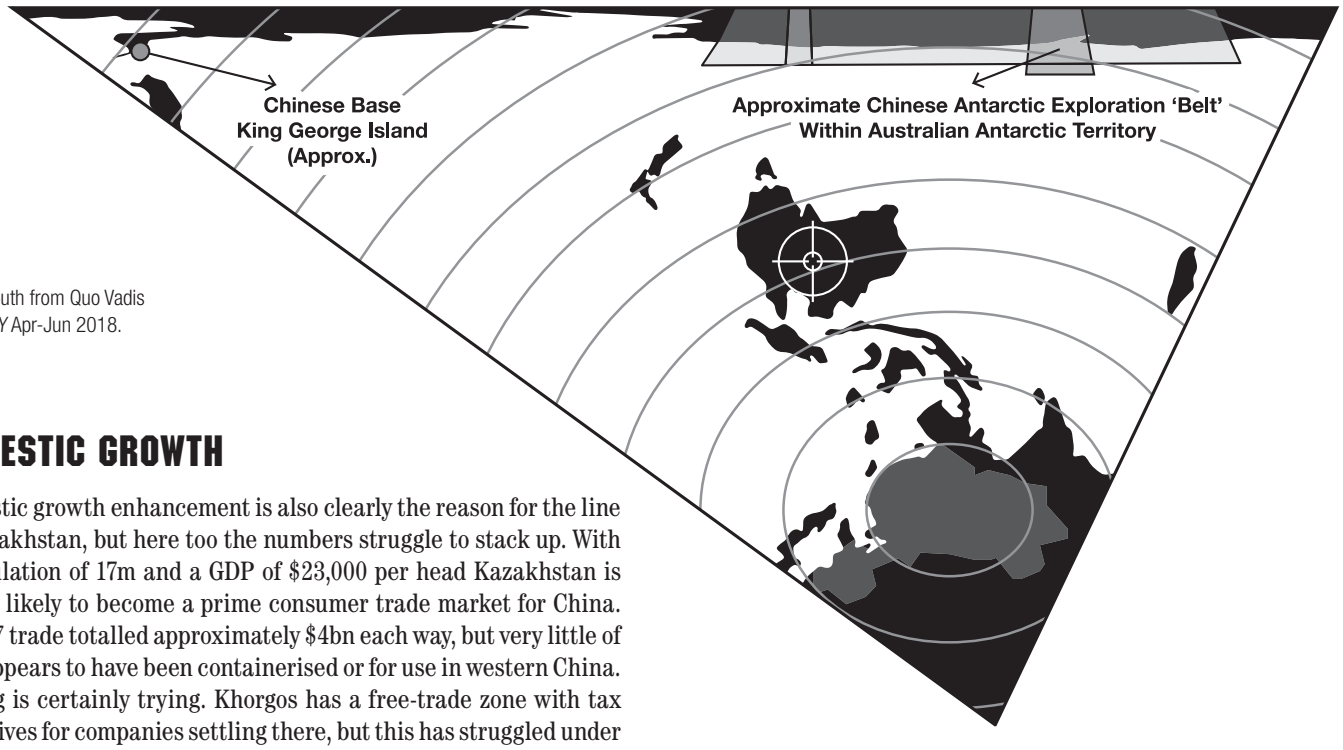
Ports and pipelines form two of BRI's legs. The third is rail. China has had a rail link to Russia and Europe for half a century – the Trans-Siberian railway – but with multiple regulatory and customs obstacles the Trans-Siberian has never played a material role in China's trade.

BRI's earliest initiatives were aimed at developing rail links west from China into Asia and then to Europe. BRI's pitch is that rail cuts transit times to European markets by a half to two thirds. In this respect BRI is not a new idea - development of transport infrastructure has played a large role in China since 1953, when Mao Zedong began focusing investment on long distance rail investments. Rail investment has continued ever since, with some 2,000 kms of new line being built each year.

Looking at the bottom line, the proposition of rail versus ship is not appealing. Moving goods around the world by ship is already extraordinarily cheap – sailing a 20-foot container (TEU) from Shanghai to Hamburg comes in at around $1,000 and takes 30-40 days. A 2017 study of rail freight rates by Donghua University reported costs for the same TEU from Chengdu to Poland at around $5,000 (other routes were similar). Beijing is subsidising rail freight, at $2,000-$3,000 per TEU, but even so volumes remain minute. Containers are cross-trained at Khorgos, a 'dry port' which opened in 2015 and where track gauges change. In 2016 Khorgos handled 80,000 TEUs, rising to 100,000 TEUs in 2017. Khorgos-watchers talk about reaching 540,000 TEUs by 2020, which would be impressive growth but still only slightly more than 1% of the container traffic passing through Shanghai alone, which handled 40m TEUs in 2017. It would also cost Beijing some $1bn per year in subsidies. At present 98% of the freight traffic is one-way – China to Europe – with trains bringing containers back 99% empty.

The issue here is a fundamental competitive disadvantage against shipping. A recent survey revealed that shippers valued a ten-day reduction in transit time at only $200. If true that means Eurasian rail has no chance of taking material market share from shipping, and in turn that BRI-rail is unlikely to deliver a satisfactory return on investment. BRI-rail has a better chance of competing against air freight, adding a few days of overall transit time for a substantial fall in costs, but the total target air market is under 1m TEUs, and therefore probably too small to generate an attractive return on investment for BRI's rail investments on its own. The economics of a potential Pakistan rail link appear no more attractive.

If the Eurasian rail link is unlikely to stand up on return on investment grounds, it might begin to pay back in development of China's domestic economic growth, at least in China's western provinces. Here the historic way that households have grown income has been to emigrate members to the east coast, which does little to grow prosperity for those left behind in relative poverty. Cheap movement for both goods and people certainly promote growth, as does the capital expenditure spent to enable it, and the $4bn Golmud-Lhasa line, running for 1,000 km from Tibet to the national rail network, can correctly be seen as a domestic growth-promoter, but with a geopolitical kicker as a logistic artery to the frontier with India.



Going South from Quo Vadis
The NAVY Apr-Jun 2018.

DOMESTIC GROWTH

Domestic growth enhancement is also clearly the reason for the line to Kazakhstan, but here too the numbers struggle to stack up. With a population of 17m and a GDP of $23,000 per head Kazakhstan is hardly likely to become a prime consumer trade market for China. In 2017 trade totalled approximately $4bn each way, but very little of that appears to have been containerised or for use in western China. Beijing is certainly trying. Khorgos has a free-trade zone with tax incentives for companies settling there, but this has struggled under restrictions on the quantity, value and types of goods that can be traded (for example China has banned the import of many food products). Furthermore, companies have chosen to use the zone as a tax haven but without carrying out any actual operations there – and without creating any employment or value-add.

So, if Eurasian rail links won't pay back, and have limited effects on GDP growth, that leaves geopolitical justification. Here power projection is probably not really the issue – China has no border disputes with Kazakhstan, Pakistan or Russia – but adding redundancy to import and export routes may be a minor kicker. With a well-founded concern for the vulnerability of its maritime trade to blockade, Beijing is probably happy to have a high-capacity link westward into the Middle East, Russia and Europe.

Ultimately, expanded rail links into Central Asia achieve a number of ends, including that insurance policy of reducing – to a small extent – China's reliance on seaborne trade flows. These increased links also go some way to stimulating the local economy and shoring up links with neighbours, particularly Kazakhstan, but they are hardly going to be generators of large financial returns.

China's plan for a rail link as part of the China-Pakistan Economic Corridor (CPEC) is equally weak, but Gwadar's location and future link to the Eurasian rail network may, in the long term, offer a neat way for China's trade to bypass sea routes past India and through the straits of Malacca, possibly giving a CPEC rail link an important strategic and geopolitical role, though again probably not a great return on capital.

BRI's rail leg is not just about broadening China's import/export routes and capacity. Over the past decade China has become a significant exporter of high-speed rail infrastructure (both track and rolling stock) and these projects have been readily swept up in the BRI narrative. The Ankara-Istanbul line is one example. Another is the Jakarta-Bandung line. In support of this contract China Development Bank advanced a 40-year loan at 2.4%, without recourse to a state guarantee, to cover 75% of the $5.29bn project. Chinese companies have also won large rail projects in Kenya and Uganda, supported by long-term Chinese loans.

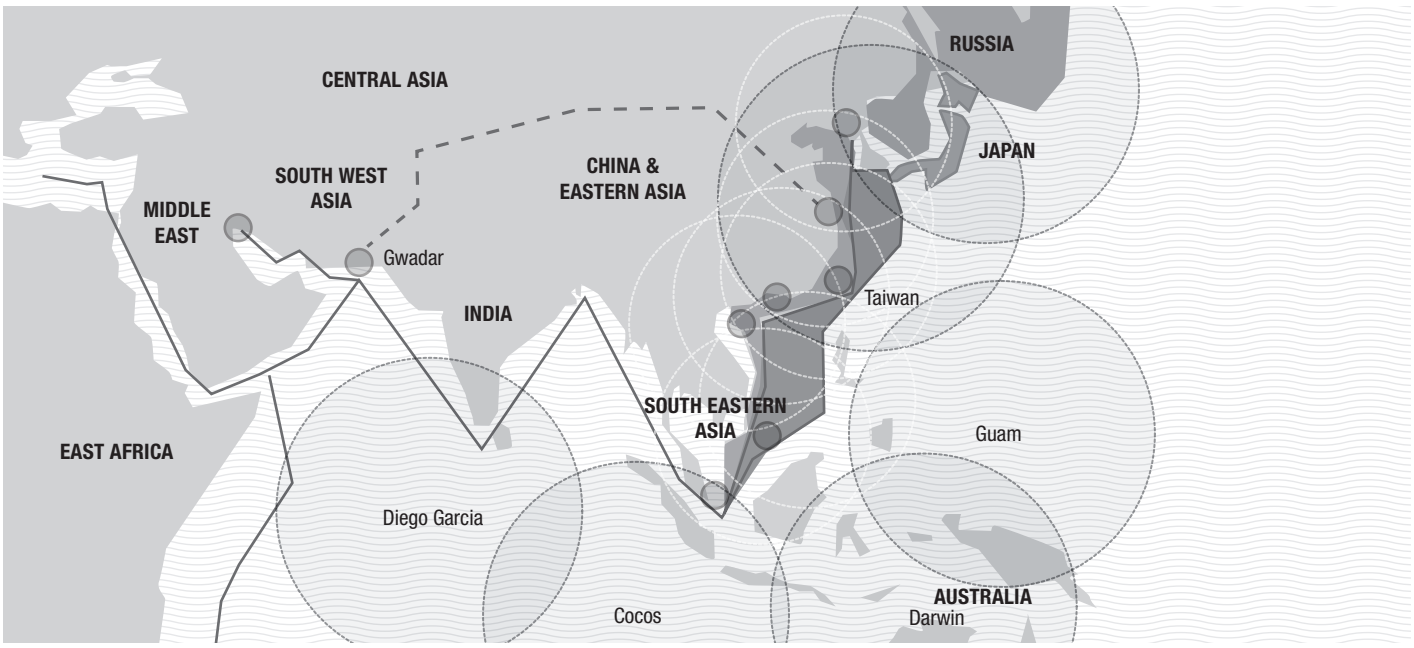
GOING SOUTH?

BRI does not just go west. It is also aimed at increasing rail connectivity to the south, from Kunming into Laos, Thailand and, ultimately, Singapore. Laos is facing financial difficulties as a result of the project, which the Asian Development Bank has described as unaffordable (code for strategic, not financial, affordability). While China is funding the bulk of the capital expenditure, in particularly difficult terrain for rail, Laos is providing $730m – but borrowing 65% of this from Exim Bank. While the rates are low (3%) Laos is banking on a surge in Chinese tourism to support the development and prospects for repayment are unclear. Experience elsewhere suggests that when travelling more than 500 kms tourists prefer a quick cheap flight to a slower more expensive rail journey, so that might be an optimistic hope.

Concerns over financing led Thailand, in 2016, to drop plans to take Chinese loans, instead opting to self-finance rail capital expenditure. The work was scaled back but will still be carried out using Chinese suppliers. There is evidence that Thailand rejected a Chinese demand for other assets to be put up as security, but Laos has put up five potash mines as security.

The Laotian route is being constructed by China Railway Group, whose winning of the $2.9bn Belgrade-Budapest link triggered a European Union investigation into broken rules on public tenders. Backpedalling, Hungary issued a public tender in late 2017, although financial support from China continues.

Chinese rail plans have fallen foul of regulations in other regions as well. A high-profile plan for a high-speed link between Los Angeles and Las Vegas foundered in the face of local political opposition. Alleged irregularities in bidding processes in Mexico, on a planned route from Mexico City to Queretaro, led to the project being scrapped.



China's Dragon's Spear Robert Cuthbert Blake *The NAVY* Jan-Mar 2016.

The election of Malaysian Prime Minister Mahathir Mohamad in May 2018 raised concerns over the BRI-backed $14bn East Coast Rail Link. Work started on the development in 2017, with the aim of linking the Strait of Malacca to the Thai border. Expressing concerns over Malaysian public debt, Mahathir described the proposed terms as "very damaging" to the economy and said it would "not serve any purpose, it is not going to give us any returns". That is a familiar BRI refrain.

CONCLUSION

China's rise has been met by enthusiasm and fear, in equal measures. Given the lack of certainty over it, the BRI can be all things to all men.

In China's 'near abroad', Beijing's infrastructure investments accomplish a number of things, but those things rarely include a decent return on investment. Building grand projects for foreign countries provides political returns and brings countries into China's orbit, while the provision of debt establishes a long-term relationship of dependency.

Suggestions that China intends to drive its neighbours into penury are probably an exaggeration, but large loans put Beijing in a position to extract non-financial concessions later. China has shown little regard in assessing whether states are in a position to make good on their loans, a major reason for why multilateral lenders have been so slow to endorse the BRI wholeheartedly.

A number of powers around the world have expressed concern over China's BRI plans. In April 2018, 27 of 28 EU ambassadors in Beijing are reported to have signed a document opposing BRI – the exception was Hungary. The 27 ambassadors complained China was using the BRI for its own interests, while not opening up its own markets for reciprocal investments. The US, Australia and Japan held talks earlier in 2018 on the possible establishment of a regional alternative to the BRI. In 2017 the US opposed AIIB and tried to pressure its allies not to join the bank.[4] Beijing's hopes that President Donald Trump might opt for the US to join the bank were quashed following what threatens to become a full-blown trade war.

China could do much to allay concerns over BRI by opening up its domestic market, but it has taken a leaf from the rise of South Korea, which combined manufacturing prowess with protectionism in order to industrialise rapidly.

Meanwhile the evidence clearly suggests that BRI is at heart a set of geopolitical plays, conducted in the shadows of large and largely illusory numbers that are designed to dazzle the mainstream media. In spite of near-hysterical descriptions of China by US rapporteurs these plays are essentially defensive – aimed at securing the flows of hydrocarbons which present the largest existential source of risk to the Chinese Communist Party in existence today.

BRI fits neatly into many quotations from Sun Tzu, but perhaps my favourite pick for BRI is this one: "The greatest victory is that which requires no battle." China is using BRI to avoid that battle, by being prepared to win it with ease. ■

REFERENCES AND NOTES

[1] See https://en.wikipedia.org/wiki/Go_Out_policy

[2] Euro Interbank Offer Rate (EURIBOR) is a daily reference rate based on the averaged interest rates at which Eurozone banks offer to lend unsecured funds to other banks in the Euro wholesale money market.

[3]. Shanghai Interbank Offer Rate (SHIBOR) for banks in the Shanghai wholesale money market.

[4] Members of the Asian Infrastructure Investment Bank (AIIB) are Afghanistan, Australia, Azerbaijan, Bahrain, Bangladesh, Brunei, Cambodia, China, Cyprus, Fiji, Georgia, Hong Kong, India, Indonesia, Iran, Israel, Jordan, Kazakhstan, Korea, Kyrgyz Republic, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Oman, Pakistan, Philippines, Qatar, Russia, Samoa, Saudi Arabia, Singapore, Sri Lanka, Tajikistan, Thailand, Timor-Leste, Turkey, UAE, Uzbekistan, Vanuatu and Vietnam. Voting rights depends on amount invested with China at 27% holding the lions-share of the voting power down to Russia at 6%, Australia at 3% and the likes to Turkey at 2% to the likes of Vietnam, Thailand, Sri Lanka and New Zealand at between 0.4-0.7 of a percent. https://www.aiib.org/en/about-aiib/governance/members-of-bank/index.html

COUNTERING ANTI-SHIP MISSILES

By Kelvin Curnow

The proliferation of Anti-Ship Missiles (AShMs) is paralleled only by that of the category of missile existing. Many modern AShMs feature the ability to receive mid-course target updates, fly a sea-skimming profile and fly a terminal attack phase designed to defeat a ship's defence measures. Each poses a unique threat to modern warships against which both hard kill and soft kill countermeasures have been developed by Western nations. It is the former which will be examined in some detail in this paper.

INTRODUCTION

Modern Anti-Ship Missiles (AShMs) range from the Thales Lightweight Modular Missile (LMM) weighing just 3 kg (6.6 lbs) with a range of 4.7 nmi (8km) through to the Chinese Dong-Feng DF-21D (DF-21D) weighing 14,700 kilograms (32,400 lb) with a range of 956 nmi (1,770 km) and a speed of Mach 10 in the terminal phase. [1] AShMs can be subsonic, supersonic, hypersonic or ballistic, each presenting a unique capability to be countered. Their guidance systems can be semi-active radar homing (SARH), active radar homing, laser, infra-red, satellite or a combination of different configurations.

ANTI-SHIP MISSILE ATTACKS IN THE FALKLANDS AND MIDDLE-EAST THEATRES OF WAR

The Cold War saw the development and proliferation of the AShM. The West largely overlooked the threat posed by Soviet AShMs which led to several notable actions that signalled the inadequacy of weapons which had been developed to counter air attack, but were unable to cope with missile attack. On 21 October 1967 Russian made P-15 Termit (NATO code name Styx) missiles were fired from two Egyptian *Komar-class* fast attack craft (FAC) against the Israeli destroyer INS EILAT at a range of 17 nmi (31km). Three missiles hit the destroyer which sank after two hours. The strike marked the rise of the AShM as the primary naval attack weapon. In the 1973 Yom Kippur war the Heil HaYam HaYisraeli (Israeli Navy) demonstrated that using a combination of radar jamming and chaff could negate the threat posed by Styx missiles.

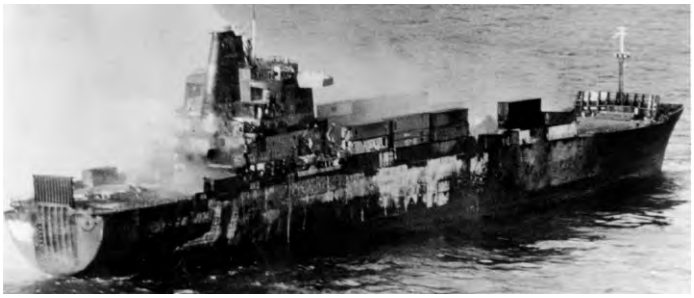
In the Falklands War the successful attack on HMS SHEFFIELD carried out by Comando de Aviación Naval Argentina (COAN – Argentine Naval Aviation) Dassault Super Étendards firing MBDA Exocet missiles on 2 May 1982 signalled that the threat was now at a whole new level. SHEFFIELD was a relatively new and sophisticated guided missile destroyer armed with the Sea Dart Missile system. Lacking either a gun or missile point defence system the destroyer, which failed to launch chaff, could do little to prevent her destruction. Another attack by Super Étendards on 25 May 1982 witnessed two Exocets fired against the carriers HMS HERMES and HMS INVINCIBLE. All Royal Navy (RN) ships in the area fired chaff while a Westland Lynx helicopter equipped with a radar decoy was also deployed. One missile fell into the sea while the other having been lured away from the warships by chaff hit the container ship ATLANTIC CONVEYER. If the events of 1967 were largely ignored by Western navies, the attack on SHEFFIELD marked a resurgence in the development of defences against AShMs.

HMS SHEFFIELD (D80) Under Tow after it was struck by an Exocet missile, May 1982. We will not Forget.

THE THREAT

There is a considerably different philosophy between Western nations on one hand and Russia and China on the other regarding AShMs. While the West prefers subsonic stealthy AShMs the East favours missiles which feature very high speeds. The AGM-158C LRASM (Long Range Anti-Ship Missile) being developed for the United States Air Force (USAF) and United States Navy (USN) is the best example of current Western thinking. It has a 300+ nmi (560+ km) range, flies at high subsonic speed, has a low radar cross-section, flies a sea-skimming profile and combines active radar homing with imaging infrared (IIR) together with electronic counter-countermeasures and artificial intelligence to provide unsurpassed capability. By way of comparison the Russian P-800 Oniks is a 320 nmi (600 km) range sea-skimming Mach 2.0 missile relying on active and passive radar homing for guidance. This missile is of note because in Australia's area of interest it is employed in its different iterations by Indonesia, India and Vietnam.

The YJ-18 is considered to be China's most potent AShM. It is a 290 nmi (538 km) range missile which flies at 600 mph (Mach 0.8.2) but in its terminal attack phase it accelerates to 2,302 mph (Mach 3.0). It is guided by an advanced inertial navigation system (INS), the Beidou Chinese GPS, and an active radar seeker in the terminal phase. A built-in data link allows the missile to receive updates of the target's location. However, according to the United States Department of Defense, China's Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) infrastructure is probably insufficient to generate and fuse the targeting information necessary to take advantage of the YJ-18's range.



MV Atlantic Conveyor The Day after the Exocet Attack (28 May 1982) Still Burning. We will Remember.

DEFENCE AGAINST THE THREAT

GUNS

In the West the Raytheon Phalanx Close-In Weapons System (CIWS) is the most widely used weapon providing defence against AShMs. The Phalanx features a six barrel 20 mm M61 Vulcan Gatling gun linked to a Ku band fire control radar. The latest Block 1B weapon can fire 4,500 rounds per minute. In addition to an improved radar the Block IB incorporates a Forward Looking Infra-Red (FLIR) sensor, an automatic acquisition video tracker, optimized gun barrels (OGB), and Enhanced Lethality Cartridges (ELC). The FLIR sensor provides a greater detection performance against AShMs, while the OGB and ELC deliver a longer range and greater kill probability (Pk).

The Phalanx has not had an enviable combat record. Accidently fired against the USS STARK by an Iraqi Dassault Mirage F1 aircraft on 17 May 1987, two Exocet missiles were not engaged by the Phalanx system. As a consequence thirty-seven sailors died and twenty-one were injured. On July 14, 2006 Hezbollah fired two Chinese C-802 AShMs at Israeli warships one of which hit the corvette INS HANIT, causing considerable damage and four fatalities. Significantly, the HANIT possessed sophisticated a multi-layered missile defence capability including a Phalanx CIWS, Barak 1 anti-missile missiles, chaff and ECM plus an active Identification Friend or Foe (IFF) system. These should have detected and brought down the AShMs but did not. With respect to both the STARK and HANIT it was claimed that their ship's defensive systems were turned off. Despite there being some evidence proffered to support these claims, it seems either implausible or negligent that ships operating in war zones had their principal defensive systems turned off.

MISSILES

For long range defence against AShMs both the European 65 nmi (120 km) range MBDA Aster 30 and the American 130 nmi (240 km) range Raytheon RIM-174 Standard Extended Range Active Missile (Standard Missile 6 [SM-6]) are currently the West's most advanced SAMs. Both missiles feature inertial guidance and active radar homing. The Aster 30 has a terminal speed of Mach 4.5, the SM-6 Mach 3.5. Both are designed to provide area defence. The Aster is fired on a one shot one kill basis and features a unique combination of aerodynamic control and direct thrust vector control called 'PIF-PAF' through which the missile is capable of high manoeuvres. Together these features are claimed to give Aster an unmatched hit-to-kill capability. The SM-6 is ripple fired with at least two missiles directed at each target. The SM-6 is designed to perform terminal phase ballistic missile defence as are the Aster 30 Block 1NT/Block 2 BMD missiles.

HMS OCEAN (L12) Forward CWIS Phalanx Mount - Apparantly fitted on the bow to prevent a ski ramp for F-8 Harrier Use.

Recognising the limitations of guns as point defence systems, some navies chose to adopt missiles as their primary defensive weapon against AShMs. An early western system was the MBDA Sea Wolf, an automated point-defence weapon designed to provide a 'last ditch' defence against AShMs. Radar directed, the missile has a range of 5.4 nmi (10 km) in its Vertical Launch System (VLS) variant and a top speed of Mach 3. The system was deployed in the Falklands War but had either no success against or little opportunity to engage Argentine Exocets. Its SARH guidance system and short range were its two major flaws. The most advanced western short range Surface to Air Missiles (SAMs) extant are the Block 2 Raytheon RIM-162 Evolved SeaSparrow Missile (ESSM) and the MBDA Common Anti-air Modular Missile (CAMM) designated as the Sea Ceptor in RN service. With respective ranges of 27 nmi (50+ km) and 13.5 nmi (25+ km) (some sources credit CAMM with a 60 km range), both are active radar homing missiles which can receive mid-course updates via data link. Both are fire and forget missiles which only require initial cueing from a ship's search radar.

THE FUTURE – THREAT AND RESPONSE

The AShM threat has grown exponentially because advanced types have ranges which outdistance that of shipborne SAMs. Both the Aster 30 and SM-6 have ranges well under that of the YJ-18. If any incoming missile is to be successfully engaged early detection of the threat is the key to success. Inevitably this requires a system which can see over the horizon. In the case of the USN and the Marine Nationale (French Navy) this capability is provided by the Northrop Grumman Hawkeye E-2C/D Early Warning and Control (AEW&C) aircraft. A similar capability is provided by the Leonardo HM2 Crowsnest helicopter to the RN. Via data link these aerial assets allow the Command and Control (C2) centre aboard a ship to fire a SAM out to its maximum range. The USN's anti-air warfare (AAW) destroyers have a cooperative engagement capability (CEC) which distributes and integrates radar data from other AAWs or a Hawkeye aircraft, to give a ship's principal air warfare officer (AWO) a single, real time composite track of any threat and the defences available to respond. The AWO on one AAW destroyer for example can decide to employ the ship's own missiles to defend against an incoming AShM, or through CEC can designate that another ship shoot down the missile. CEC gives the USN a considerable advantage in its ability to defend its assets because units are seeing the same picture simultaneously and can act as a single battle group to provide effective defence.

MBDA Sea Ceptor as fitted to the T23 Frigate HMS ARGYLL (F231) , 2017.

INS HANIT a SA'AR 5 Class Corvette after being struck by a Hezbollah C-802 Missile in 2006, which killed four sailors – we will remember them.

When long-range shots fail the ship's 'last ditch' systems come into play. New weapons both conventional and unconventional are being developed. At the 2019 Paris Air Show MBDA submitted that with the increased sophistication and performance of anti-ship missiles soft-kill countermeasures and decoys would prove insufficient. To redress the balance of power MBDA offered as a solution a hard-kill anti-missile system which fires a miniature missile of 100 cm in length and 10 kg in weight. Another means of countering threats could be provided via electronic attack. The effectiveness of an electronic warfare and directed energy weapon was demonstrated when on 18 July 2019 the USMC's Light Marine Air Defense Integrated System (LMADIS) mounted on the USS BOXER brought down an Iranian drone. This is one of many examples of such weapons either in service or being developed for the American armed forces. Other examples of directed energy weapons being developed include the RN's Dragonfire Laser Directed Energy Weapon (LDEW) and the Rheinmetall and MBDA Deutschland high energy laser being developed for the Deutsche Marine (German Navy). Directed energy weapons (DEWs) are broadly following two paths of development, those which can physically destroy the threat and those which can 'dazzle' or electronically attack the guidance system of the incoming AShM.

One system which goes largely ignored as a future key component for successful fleet defence against AShMs is the Lockheed Martin F-35 which has demonstrated unrivalled capabilities in detecting and destroying incoming threats. The Northrop Grumman electro-optical AN/AAQ-37 Distributed Aperture System (DAS) provides the aircraft with 360 degrees SA and mounted in a test platform detected a two-stage ballistic missile launch 702 nmi (1,300 kms) away. Demonstrating another unique capability, an F-35B detected a Beechcraft MQM-107 target drone and via the fighter's Multifunction Advanced Data Link (MADL) fed the information to an Aegis Baseline 9 system installed at a USN test site. This information was used to successfully engage and destroy the drone with an SM-6 missile. The test the demonstrated USN's Naval Integrated Fire Control-Counter Air concept (NIFC-CA) concept which is designed to link data from ships and aircraft in a carrier strike group (CSG) to create a network of sensors and shooters. NIFC-CA allows aircraft such as the F-35 and Block III Boeing F/A-18E/F Super Hornet to identify and provide targeting solutions for ship-launched missiles over the horizon and over land. The stealthy F-35s can operate as forward scouts feeding data back to an E-2D that acts as a sensor node which then feeds data via secure data link to the shooters which could include ships in a CSG and other F-35s along with F/A-18s and EA-18G Growlers. Either an E-2D or F-35 can be the key node in NIFC-CA.

AUSTRALIA

The Royal Australian Navy is currently poorly equipped to counter the threat of modern AShMs. The *Hobart-class* air warfare destroyers (AWDs) are armed with the Raytheon RIM-66 Standard (SM-2) medium range SAM. It has a range of 90 nmi (167 km), a speed of Mach 3.5 and is semi-active radar homing. The AWDs are equipped with the Aegis combat system which employs as its primary radar system the Lockheed Martin AN/SPY-1D(V) S-band radar featuring four passive electronic system arrays (PESA). Being an SARH missile the RIM-66 must be guided to its target by an SPG-62 continuous wave illuminator of which the Hobarts possess two controlled by a Raytheon Mark 99 fire-control system. This places the AWD at a considerable disadvantage if the destroyer was to experience a saturation attack of twenty to thirty missiles because the mechanically steered SPG-62 can only guide a limited number of SM-2s at once. [2] The SM-6, for which the RAN has been nominated as a prospective customer, overcomes this difficulty because it is an active radar homing missile. The Block 1 ESSM missiles which can be carried by the AWDs are also SARH missiles and therefore must use the two continuous wave illuminators, thus compounding the problem. This will be addressed when these missiles are upgraded to Block 2 standard. Yet another shortcoming is that the Hobarts are only fitted with one Phalanx CIWS something which needs to be resolved by either fitting an additional Phalanx, or preferably by adding a SeaRAM system. On a more positive note the Hobarts possess CEC which allows them to operate seamlessly within a USN CSG.

The *Anzac-class* frigates likewise lack a CIWS which is only partially offset by the fact that they are equipped with the CEA CEFAR 3D Active Phased Array Radar which provides fire control tracking for every target detected. Saturation attacks are easily countered by CEFAR which can guide the frigate's thirty-two ESSMs simultaneously to their targets and the number of threats destroyed will only be limited by the number of ESSMs available and the rate

USS STARK (FFG-31) after being hit by Iraqi Exocet, May 1987. We will not Forget.

at which they can be launched. When Block 1 ESSMs are replaced by Block 2s on the Anzacs their anti-AShM capabilities will increase exponentially. The future *Hunter-class* frigates will be equipped with an advanced version of the CEFAR radar, the AEGIS Baseline 9 combat management system and Saab Australia 9LV tactical interface providing the ships with unparalleled capability capable of detecting and engaging aircraft as well as ballistic missiles. These systems will give the nine frigates superior capabilities over the AWDs. The three Aegis DDGs plus nine Future Frigates will give Australia the largest fleet of Aegis-equipped warships outside the US Navy. [3] However, all is not so positive for the RAN. Its largest assets, the two *Canberra-class* Landing Helicopter Dock (LHD) ships possess no effective AShM defence whatsoever. While it had been planned to fit the vessels with three Phalanx CIWS by 2018 this has not occurred, a matter which needs to be addressed urgently. Additionally, the decision not to operate F-35Bs off these ships must be reassessed. [4] F-35s would give Australia the capability to operate seamlessly within the USN's NIFC-CA system giving the RAN unparalleled access to detection and targeting data.

OBSERVATIONS AND CONCLUSION

The growing threat presented by the proliferation of AShMs has focused the West's thinking on the development of effective countermeasures. Inadequately armed vessels are easy prey to AShMs. This fact was proven again by the attack by Yemen based Houthi rebels who [By Ed. apparently] on 1 October 2016 launched a C-802 missile against the UAE operated HSV-2 Swift operating around Bab-el-Mandeb strait. The vessel suffered heavy damage. The Houthis also carried out two attacks on the USS MASON which was operating in the same area. On 9 October 2016 the *Arleigh Burke class* destroyer was targeted by two C-802 missiles which in one version of events missiles fell short and crashed into the water. The United States Naval Institute reported that the MASON fired two SM-2 missiles and one ESSM missile to intercept the two C-802s as well as deploying its Nulka missile decoy, whether these were successful in shooting down or countering the incoming missiles remains unclear. Six days later operating in the Red Sea the destroyer was targeted by five AShMs. The Navy Times reported the MASON fired a Nulka decoy, an infrared decoy, and several SM-2 missiles in response, either neutralizing or intercepting four of the five missiles. The fifth C-802 was neutralized by a Nulka launched from USS NITZE after the MASON alerted her to the threat using CEC. Forty-two years on from the attack on the EILAT the threat to shipping by AShMs remains greater than ever. Only comprehensive countermeasures against AShMs will provide any level of effective defence. The Australian government could do well to reflect on this as it again commits RAN ships to the dangerous waters of the Persian Gulf.

By Editor: Mr Kelvin Curnow entered this paper into the 2019 Essay Competition, and it just failed to secure a position. He kindly has allowed for its publication, given its timeliness and importance to current maritime strategic affairs and thinking.

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[3] For further extensive comments see: Max Blenkin, "A BIGGER SHIELD – Aegis Baseline 9 for Australia", ADBR, Online: https://adbr.com.au/a-bigger-shield-aegis-baseline-9-for-australia/. Accessed: 24 August 2019.

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Aurora Astralis – Should it be owned by Australia and under the Australian White Ensign as per RN Polar Research Vessel HMS PROTECTOR (A173).

A Liberty Ship *Unknown* sailoring on.

MV Red Oak Victory of the *Victory-class.*

INTERNATIONAL MARITIME UNIONS URGE AUSTRALIA TO SAVE ITS SHIPPING

International maritime unions have urged the Morrison government to reverse the decline of the Australian shipping industry and invest in the creation of a new strategic fleet to aid Australia's emergency response capacity to natural disasters and move to protect the nation's economic, environmental, fuel and national security interests.

The international delegation – from the US, Canada, New Zealand, Norway and the UK – appeared before the Senate Inquiry by the Rural and Regional Affairs and Transport References Committee's into the policy, regulatory, taxation, administrative and funding priorities for Australian shipping at Parliament House in Canberra.

Union leaders and researchers appearing before the Committee presented details on current maritime cabotage legislation around the world and why a strong domestic maritime industry is critical to safeguarding Australia's economic and national security, providing jobs, protecting the environment, and providing emergency assistance during natural disasters.

Jim Given, president of the Seafarers' International Union of Canada and chair of the International Trade Workers Federation (ITF) *Cabotage Task Force*, told the inquiry that:

> "The reason for our appearance before you today is to discuss the importance of retaining and reinvigorating a domestic marine shipping industry."

Dave Heindel, secretary-treasurer of the Seafarers' International Union of North America and chair of the ITF Seafarers' Section also underscored the economic benefits of America's maritime industry.

> "Our domestic maritime cabotage laws have produced 40,000 American vessels built in US shipyards. They provide roughly 650,000 sustained American jobs with $41 billion in labor compensation and ultimately contribute $150 billion in annual economic output."

ITF maritime co-ordinator Jacqueline Smith asked Senators:

> "What is the true cost we should focus on? Is it the cost to the shipping company? Or the cost to Australia? As politicians, and as community leaders of the country, are the people not more important than the profit? Because that is what it boils down to,"

The delegation also renewed the call from maritime unions attending the ITF Cabotage Task Force meeting in Sydney earlier this week to act immediately to purchase the *Aurora Australis*, to strengthen Australia's disaster response capacity as a first step in the creation a strategic fleet of Australian-crewed vessels and reinvigoration of Australia's domestic shipping industry. (Source: ITF)

U.S. WARTIME BUILDING PROGRAMME

Shipyards and the U.S. government learned invaluable lessons about shipbuilding during World War I. The United States began increasing the size of its merchant fleet in 1936, well before it entered the Second World War. The goal quickly became building sturdy, reliable ships in a hurry—faster than German submarines could sink them. By 1943, American shipyards turned out three a day—nearly 3,300 over the course of the war.

To build the merchant fleet, the U.S. Maritime Commission expanded existing shipyards and built new ones along the Atlantic, Pacific, and Gulf coasts. To simplify and speed construction, the ships they produced would be virtually identical. The types of ships designed for emergency construction were called "Liberty" and "Victory" ships.

> They built 18 brand new shipyards just for Liberties and put 650,000 Americans—women, men, young people, old people—building these ships. They became the largest fleet of ships ever built in the history of the world in such a short period of time.
>
> *Rear Admiral. Thomas Patterson, United States Merchant Service, Ret.*

The Liberty Ship

The "Liberty", was the most famous wartime-built merchant ship – a staggering 2,708 were completed between 1941 and 1945 in 28 shipyards in the USA. Ship types were based on a design by UK builder, J.L. Thompson, and welded construction revolutionised the speed of construction. The record, being *Robert E. Peary* which was built in 4 days, 15 hours and 29 mins, after keel laying!

At 441 ft in length, the Liberty had a deadweight capacity of 9,140 tons with a speed of 11 knots from a three-cylinder steam reciprocating engine.

About 200 ships were lost during WW II due to various circumstances, including hull and deck fractures, which led to fatal sinkings The blame was attributed to the use of inexperienced labour and poor weld preparation which led weld failure through brittle fracture of the welds.

The Victory

A successor to the "Liberty" was the "Victory", a faster and improved cargo ship of which 534 were built by War's end and a number Victories still survive in the US fleet reserve.

One of the first acts of the United States War Shipping Administration upon its formation in February 1942 was to commission the design of what came to be known as the Victory class. The design was an enhancement of the Liberty ship and were slightly larger. With a more sophisticated hull shape it could achieve higher speed. ■

FIT FOR PURPOSE?

The Businessman Gary Johnston launched his second report into the Attack-class submarine, *Submarines for Australia*, March 2020, see https://submarinesforaustralia.com.au/sea/wp-content/uploads/Australias-Future-Submarine-Insight-Economics-report-11-March-2020.pdf.

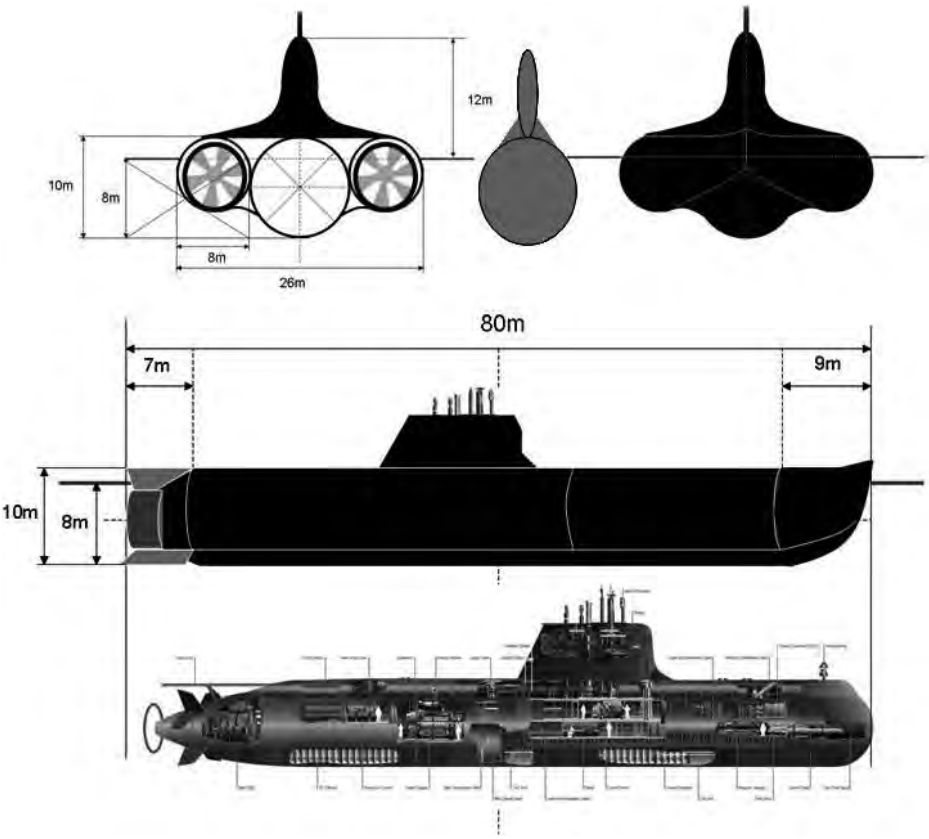
Writing in *The Australian*, Johnston commented (12 March 2020) *inter alia*:

In April 2016, 101 years after AE2 entered the Dardanelles on a very successful wartime mission and 62 years after the Nautilus's maiden voyage, prime minister Malcolm Turnbull announced the French government-owned Naval Group had been selected to design Australia's future submarine, the Attack class. And like AE1, it would have diesel engines and lead acid batteries. If all went well, the first submarine would enter service in 2035. The program will cost an eye-watering $50bn — perhaps much more — in constant 2018 prices. Australia ¬already holds the record for the most expensive surface warships of their size ever built with the Hobart-class air-warfare destroyers. It looks like we are about to extend our gold medal performance to the underwater.

Turnbull's announcement came as a surprise. At the time the French proposed to convert their nuclear-powered Barracuda design to diesel-electric propulsion (now it will be a new design). Everything about the project — cost, delivery, technology and risk — suggests it is a dud idea that dumbs down a nuclear submarine by removing the whole basis of its superior capability, and then charging at least twice as much for a far less capable vessel. When the first is delivered it will likely be obsolete. The last is due 100 years after the Nautilus put to sea.

Dick Smith joined with me to place an advertisement in *The Australian* criticising the deal. Neither Defence nor government took notice. I commissioned Insight Economics to undertake substantial research and come up with an alternative. This shows that if the government acts now it is not too late to change course. But the key message is that Australian submarines are required to operate at the highest level of intensity, even in peacetime, in an increasingly contested and congested theatre where four nations deploy nuclear submarines and where the potential adversary is pursuing a strategy of anti-access and area denial.

Not only will a diesel submarine have less effectiveness in our area of operations than the American nuclear submarines with which we partner, but its lack of stealth while snorting and its low sustainable speed if detected threatens its survivability.



Conceptual Design for a Versatile Modular System (VMS)Boat Hull SSK alongside a Tear Drop Collins Class SSK (Image RCB©2012).

One of the most shameful episodes in our military history occurred in 1941-42 when we sent brave young Australians, with predictable results, to fight the advanced Japanese Zero fighters in obsolete aircraft. We owe our servicemen and women better than that. We are a wealthy country and have a moral obligation to provide ADF personnel with the best possible military platforms when sent into harm's way.

If we are serious about submarine operations at the highest level of intensity, we need nuclear-powered attack submarines, complemented by autonomous underwater vehicles…submarines are an offensive weapons system and presently provide the ADF's only substantial power projection capability.

> …if the government commits to nuclear submarines then I will commit to endowing a chair in -nuclear engineering in an Australian university.

Paul Kelly, also writing in *The Australian* 22 Feb 2020, noted *inter alia*:

The [*Attack-class*] project has been riven with bitter contention and flawed opportunity under both Tony Abbott and Malcolm Turnbull as prime ministers. The paradox at the heart of this submarine program is wicked. The policy and political implications dictate standing by the French deal rather than abandoning it – yet the project faces only deeper criticism, both from submarine believers and opponents.

A report [in January] by the Australian National Audit Office said the "project's success depended upon the long-term partnership between Defence and Naval Group". The reality, however, is that this relationship has been mired in cultural and technical disputes that threaten the entire undertaking and have the potential to threaten Australia-France ties if not repaired.

Rear Admiral Greg Sammut, chief of the submarine program, has told parliament the program is "high risk", a remark that testifies to its multiple ambitions…confidence in the project was undermined last month when the ANAO report revealed that the Naval Shipbuilding Advisory Board, chaired by former US Navy secretary Don Winter, with heavy US representation, warned in 2018 that, even if negotiations with the French were successful:

> "Defence (should) consider if proceeding is in the national interest."

Kelly notes: "It was an extraordinary remark reflecting the depth of angst about the Defence-Naval Group relationship along with US unease about the French".

The more doubts grow about the French, the more the Collins extension option will gain advocates. For those who think 2034 is already intolerable, it is the option to be pursued now. But this would need to be done with a parallel assessment about the nuclear submarine option down the track.

Type 26 Frigate (BAE Systems).

The government and Defence believe the nuclear option is not viable now. Might that change?

By Editorial Board. As noted in *Crow's Nest*, and in *Letters* (this issue) *The NAVY* and the NLA – as also outlined in *The Statement of Policy*, p. 5 – has consistently advocated alternative submarine designs (boat hull versatile modularity and heavy lift for non-nuclear, versus tear drop for nuclear) and the adoption of an early nuclear programme: plans B and C. See also John Strang's final contributions before his sad death: "Australia and its 21st Century Defence Needs: Submarines, Part I (2015), and Part II (2016)", *The NAVY*, Vol. 77, Iss. 4, Oct-Dec, pp. 5-9, and Vol. 78, Iss. 1, Jan-Mar, pp. 6-10.

The *Collins-class* cannot be extended long enough to cope. To do so would put sailors and Australia at risk. The likely cost blow-outs have also been recognised by *The NAVY*. The $80B suggested by Johnston and as articulated recently to the ANAO, is considered to be a further underestimation. A figure of $92.5B is estimated ($7.71B per submarine), based on:

- featurism/ increasing mission creep, and;
- the failure of Commonwealth and Defence to adequately resource, lead and program-manage the front-end of this overly-complicated programme.

At $7.71B per submarine, this makes the *Attack-class* more expensive than building a nuclear submarine of the same tonnage and dimensions. And more expensive than "buying off the shelf", if that were possible. In other words, no longer *value for money*.

The NAVY has previously commented on the poor leadership, direction and management of the program (not from Lockheed-Martin or Naval Group) – seemingly both in Canberra and Adelaide. This remains the case. It is understood that a number of imported Commonwealth directors are likely not to be extended, as offered by their original, hugely generous contracts.

The current COVID-19 Pandemic, coming on top of the *Great Recession* (2007/8-2019), indicates that the future economy will look nothing like what went before. In this economy, Government has the rare opportunity to reach out, cancel, nullify, redund and replace all that has gone before. Particularly now that money is valueless. There are other industrialists who can reach in. But, as Johnston also commented recently – along with others – philanthropy to industry, research, and higher education, by the Australian rich has been paltry compared with the U.S. (and even UK) in recent decades. Many of the rich would seemingly rather give to the rest of the world, than invest in their own country. Why? This will need to change – and is likely to as Australia recovers from the COVID-19 pandemic, in increasingly dangerous times.

GREENWICH STATION

The Royal Navy faces the prospect of going without the few destroyers that remain in service, and instead moving towards a fleet comprised entirely of frigates. The RN today fields six destroyers of the *Type 45 Class*, 9400 ton warships costing over $2 billion which, given their size, have underwhelming firepower with only 48 launch cells for missiles. Compared to the 96 on the American *Arleigh Burke Class* and 112 on the Chinese *Type 055 Class* destroyers. These ships are also cheaper than the *Type 45 Class* and appear to be far more reliable. Type 45's Diesel engines reportedly 'degrade catastrophically' in hot climates where the ships were "designed" to spend most of their time – in the Arabian Gulf or the waters of Southeast Asia. Maintenance requirements and poor reliability mean that only 2-3 warships are ever operational at one time, although availability is improving.

A possible replacement for the Type 45 destroyers is being considered as a version of the new Type 26 frigate, which should enter service in the mid-2020s (with the RAN *Hunter-class* at the end of the 2020s) – and that might replace the Type 45s in the 2030s. The prospect of developing a Type 26 air-defence variant offers hope to beleaguered UK naval shipbuilders:

> "We've been told that consideration is already being given to the development of an anti-air warfare variant of the Type 26, a variant that will function as a future replacement for the Type 45 destroyer fleet,"

The RN in 2020 possesses just 19 escort ships, including 13 Type 23 frigates and six Type 45s. The Type 23s are general-purpose escorts with an anti-submarine-warfare focus. The Type 45s with Sampson radars and Sea Viper missiles primarily are air-defence ships. The RNs two new aircraft carriers each could sail in a battlegroup which would normally require two destroyers, a frigate, an oiler and, potentially, a nuclear powered, *Astute-class* submarine. A spokesperson commented:

> "…the numbers simply do not add up. We [the UK] can only get out about four frigates and two destroyers (on a good day), let alone providing 6 dedicated frigates and destroyers to accompany HM Ships QUEEN ELIZABETH (R08) and PRINCE OF WALES (R09)".

HMS DARING (D32), entered service in 2009 – the sixth and last, HMS DUNCAN (D37), joined the fleet in 2013. Only three or four of the destroyers actually have crews and are available for deployment at any one time. The same is the case for the Type 23s, whose increasing age is also leading to unreliability. The plan is to acquire eight new Types 26s and five Type 31s to replace the Type 23s – but many in the RN consider this "too little; too late".

BAE Systems is building the 7,000-ton-displacement Type 26s; while Babcock, also based in Scotland, is building the slightly smaller Type 31s. If the MoD tasked BAE Systems to develop the Type 4X (Type 26 destroyer variant), the company's yard in Scotland could transition immediately from manufacturing Type 26s to making the new destroyers.

> "The Ministry of Defense want to get to a position where there is a constant rolling production line of Type 26/Type 45 successor and a second production line of Type 31e – building both lines permanently,"

It is questionable whether the Type 26 hull can support the radar and missiles that a destroyer would require. A Type 45 displaces almost 9,500 tons due to the weight of the Sampson radar and 48 vertical launch cells for its Sea Viper missiles.

Cost is also a question. The Type 45s cost a little over two billion dollars apiece. The Type 26s are cheaper but adding a better radar and long-range missiles to a Type 26 would substantially increase the costs. ■

IN DEFENCE OF OLD NAVY VALUES

By H. Morant

This paper is set against the backdrop of the Maritime Warfare Officer Project, Summary Report, drafted by the Australian Human Rights Commission (AHRC) between 2016 and 2017 and delivered to Chief of Navy in 2018. Itself set against three connected strands that contributed to the report, and potentially determined its context and conclusions. Namely: the AHRC Review by Elizabeth Broderick into the *Treatment of Women at the Australian Defence Force Academy,* 2013, (following the UNSW-ADFA 2011 Skype scandal, leading to the unfair (probably unlawful) dismissal of, then, Commodore Bruce Kafer AM CSC RAN); the 2014 AHRC *Review into the Treatment of Women in the Australian Defence Force*, also by Elizabeth Broderick; the *New Generation Navy* programme, launched by the then CN, Vice Admiral Russ Crane AO, CSM RAN, in 2009, and re-launched in April 2019 under Plan Pelorus by Chief of Navy. This paper considers the report into the Maritime Warfare Branch; its rationale, consequences, and biases and some of the reasons and potential ramifications on capability and the existential, pre-postmodern, enduring values of Navy.

INTRODUCTION

Over the past decade there have been significant changes regarding the rights of women, gender equality and minorities in the workplace – culminating, perhaps, in General David Morrison's AO 2013 "Respect Women or GET OUT" speech to Army (and ADF) and the *Same Sex Marriage* vote of 2017. Many changes have been to the good. However, the empirical bases for change have not always been evident – or evidence-based – and assumptions appear to have been made that may not pass the *fitness* test. As reported by *The NAVY*, editorial *Think not what you are entitled to!* in November 2017 [1], Deputy Chief of Navy signalled the Fleet Command Directive *the Navy Guide to Breastfeeding in the Workplace,* which:

> …endorsed [inter alia] breastfeeding in the workplace…as a tool to start a conversation between managers, supervisors, and breastfeeding mothers…facilitating support for working mothers […critical] to delivering Navy's Warfighting effect [and] future capability […as] a diverse and inclusive organisation that continues to execute our mission to fight and win at sea […The] POC for the guide is the Navy Women's Strategic Adviser (NWSA).

In June 2016, 19.1% of Navy's complement was female. According to the *Women in the ADF Report* (2015-2016), 'success in gender diversity and inclusion in attraction and recruitment' will be achieved when Key Performance Indicators (KPIs) show:

Commodore Training, Commodore Charles Huxtable, RAN (centre) at Bridge Training Facility - West Opening 20 Feb (Image LSIS Ronnie Baltoft).

HMS BOUNTY II A full size replica under full sail and American Colours. Was Vice Admiral William Blyth FRS RN, brilliant navigator and enlightened Governor of New South Wales the corporate psychopath, or the mutineers Fletcher Christian (BOUNTY) and John MacArthur (Rum Rebellion)?

- The number of women recruited is at or above the number required to meet each Service's 2023 female participation targets
- initially 25% for Navy; increased to an aspirational target of 35% in February 2018 by Chief of Navy;
- Women remain in the recruiting pathways at rates comparable to men;
- And Women's satisfaction with the recruitment process is comparable to that of men.

The editorial concluded, *inter alia*:

1. if gender-based KPIs are to be met by 2023 (the target was set in 2017/18) using historical retention rates (which are understandably higher for men than for women); allowing for the current proportion of men to women (80.9:19.1), and an increase in annual recruiting to over 2250 a year (about a 10% increase over current levels), 30% of recruits would need to be female for the next 5 years.
2. If the 25% target is to be met without increasing recruiting further, it would mean all-female recruiting (that was reportedly occurring for some entries in 2018) for the next 5 years and a redundancy programme for males.
3. Other than by increasing overall recruiting three-fold, for women-only until 2023, and 'reducing' the male workforce by 11% over and above 'natural wastage', would the 35% target be reached.

The assertions in the Editorial were apparently neither refuted nor substantiated by Navy.

REPORTING AND BIASING

The reports by Elizabeth Broderick into the ADF (4 in total) were drafted while she was the Sex Discrimination Commissioner (SDC) to the Australian Human Rights Commission, 2007-2015. The current SDC is Kate Jenkins.

It is unclear who undertook the *Maritime Warfare Officer Project*, since there is no sign off by the AHRC. Both Broderick and Jenkins are Lawyers – Broderick worked as a part-time partner at NSW law

SECTION 18C OF THE RACIAL DISCRIMINATION ACT (RDA)

– deals with offensive behaviour because of race, colour or national or ethnic origin:

(1) It is unlawful for a person to do an act, otherwise than in private, if:

(a) the act is reasonably likely, in all the circumstances, to *offend, insult, humiliate* or intimidate another person or a group of people; and

(b) the act is done because of the race, colour or national or ethnic origin of the other person or of some or all of the people in the group.

(2) For the purposes of subsection (1), an act is taken not to be done in private if it:

(a) causes words, sounds, images or writing to be communicated to the public; or

(b) is done in a public place; or

(c) is done in the sight or hearing of people who are in a public place.

(3) In this section:

"public place " includes any place to which the public have access as of right or by invitation, whether express or implied and whether or not a charge is made for admission to the place.

Defences to 18C are found under 18D of the Racial Discrimination Act.[6] Exemptions are made under Section 18D for:

- artistic works,
- academic, scientific or other purposes that are genuinely in the public interest,
- fair and accurate reporting, or
- fair comment that is an expression of genuine belief.

SECTION 18D, EXEMPTIONS

Section 18C does not render unlawful anything said or done reasonably and in good faith:

(a) in the performance, exhibition or distribution of an artistic work; or

(b) in the course of any statement, publication, discussion or debate made or held for any genuine academic, artistic or scientific purpose or any other genuine purpose in the public interest; or

(c) in making or publishing:

(i) a fair and accurate report of any event or matter of public interest; or

(ii) a fair comment on any event or matter of public interest if the comment is an expression of a genuine belief held by the person making the comment.

firm Blake Dawson for twelve years – the first partner at the firm to work part-time, and was named 'Telstra NSW Business Woman of the Year (2000–2001)'. Jenkins was the lead partner at Herbert Smith Freehills equal opportunity practice, and led the firm's *pro bono* community program. She was the Commissioner at the Victorian Equal Opportunity and Human Rights Commission from 2013.

Section 18C has been criticised from all sides of politics, including unionists, for "interfering with *freedom of speech* and political communication in Australia". The AHRC has the authority to investigate (in camera) charges made against individuals citing Sections 18C and 18D. A number of known cases have been over-turned – with actions brought against individuals, politicians, journalists, comedians, cartoonists, university students, media organisations and governments. The Australian Law Reform Commission Report 129 (1 Mar 2016) stated, *inter alia*:

> In [their] view, 18C of the RDA would benefit from more thorough review in relation to implications for freedom of speech. In particular, there are arguments that 18C lacks sufficient precision and clarity, and unjustifiably interferes with *freedom of speech* by extending to speech that is reasonably likely to *offend*. In some respects, the provision is broader than is required under international law, broader than similar laws in other jurisdictions, and may be susceptible to constitutional challenge.

QUESTION SETTING

The MWO Project report undertook a very limited literature review. The average year of referenced material is 2016 – the earliest 2011. The latest (and majority) of references are from 2018. Interviews were undertaken between 2016 and 2017. References made in 2018 are largely to Grey Literature – in-house material provided by the AHRC, Government/ Defence. They refer to a limited number of external 2018 papers, in one case multiply quoting a single journal article on the mining industry; another noting the *Report on the Collision between USS Fitzgerald (DDG 62) and Motor Vessel ACX Crystal* where questions were raised regarding female bridge personnel/ navigators/ officers of the watch at the time of the collision.

The literature seemingly assumes a *Tabula Rasa*. There is limited research or analysis undertaken before 2011 (women have been serving at sea in the RAN since 1992, almost 30 years) and the 2018 papers (when the report was finalised) were used, seemingly, to establish contemporary relevance more than substantiate context. Initial analysis raises some questions about the report:

1. Questions of Navy, including:
    a. why the report was to be addressed by the AHRC, rather than any number of in-house departments, including in the APS, DSTG, UNSW at ADFA, one of the four consultancy companies (that cover all parts of Defence), other Services/Branches, or Deputy Chief of Navy staff (suitably augmented by subject matter expertise);
    b. who gave permission for the report to proceed; authorised the AHRC to undertake the report, and what was their intent?
    c. what reporting safeguards were put in place to enable trusts to be maintained and risks appropriately mitigated in this most sensitive of workforces, core to the esprit of Navy. This was always going to be a hi-profile/ hi-risk investigation.
2. The authority of the AHRC to undertake such an investigation, including:
    a. the models, methods, and questions the AHRC was going to apply – agreed and scoped appropriately beforehand;
    b. the Literature Review, reference to/ researching alongside other Allied Navies (e.g. USN and RN) and breadth of the investigation, including secure reporting lines, for example if any civil cases were identified;
    c. the personnel to be entrusted with undertaking interviews of Navy personnel, their academic as well as professional standing, dedicated reporting lines/ supervisors, and a declared assessment of *apriori* biases.

Noting the sensitivity and the knowledge that might be accrued, this may have included having previously vetted researchers – the Principal Investigator potentially even being positively vetted. As would be done in other, arguably, less sensitive research areas.

3. The responsibility transferred by Navy to the AHRC to declare biases and apply appropriate modelling and references to answer specifically bounded (and boundable) questions within the remit of a command-directed tasking order, including:
    a. identifying the rights of interviewees, as well as inquisitors;
    b. reporting constraints and classification – including the right to review and test the results independently/ by peer review, prior to publication;
    c. scoping existing biases within AHRC, Navy and methodologies applied that would need to be accounted for in any statistical modelling – particularly for such a sensitive and hi-profile report.

REPORTING STATISTICS

Over two hundred MWO personnel were interviewed by AHRC Researchers, see Table 1.

The survey may not be representative of the branch in terms of age and rank. It is bottom heavy – over 40% of warfare officers surveyed may be considered to be under-training and not occupying establishment positions in the watch and station bill, compared to 15% of the Branch. Similarly, over fifty-percent of the population is aged 27 or under, compared with 25% of the branch as a whole.

Set against approximate, published/ estimated figures for the branch, the breakdown is shown at Table 2.

In terms of 'Face', while the average age of Navy officers (and the Warfare Branch) may reduce to 28-30 years of age, the current average age (33-34) means the 'Face of Navy Officers' – by age and rank – is a Lieutenant Commander; not a Lieutenant as presented by the survey. To be representative, the survey would have had to interview more senior, trained officers (aged over 27), than it did. This may represent a possible flaw in the logic, which seemingly assumed (without supporting evidence) that the values and ideas of more junior warfare officers, outweigh those of trained/ experienced officers – and models biases accordingly.

LIES, DAMNED LIES, AND STATISTICS

One of the major flaws of the metrication industry is that "it measures/ surveys what it can, not what it should or needs to". [2] Interviewees are polarised around shore training establishments

Table 1:
Breakdown by Rank, Age and Base

Base	%	Rank	%	Age	%
HMAS 1	7%	MIDN	34%	17-21	24%
HMAS 2	19%	ASLT	5%	22-27	27%
HMAS 3	6%	SBLT	13%	28-35	29%
HMAS 4	2%	LEUT	31%	36-49	13%
HMAS 5	32%	LCDR	14%	50+	7%
HMAS 6	26%	CMDR	3%		
HMAS 7	8%				

Table 2:
Comparison against reported/estimated MWO Population

Rank	% Sample Size in Rank	Approx. % of Warfare Branch in Rank	Age	% Sample Size in Age Bracket	Approx. % of Warfare Branch in Age Bracket
CMDR	3%	10%	50+	7%	9%
LCDR	14%	31%	36-49	13%	28%
LEUT	31%	46%	28-35	29%	38%
SBLT/ASBLT	18%	7%	22-27	27%	21%
MIDN	34%	6%	17-21	24%	4%
Face of Sample / Branch	LEUT	LCDR	Average Age	29-30	33-34

(for reasons probably of access and approval) – rather than operational deployed units. Up to 85% of all Warfare Midshipman in rank at the time may have been interviewed (and over 30% of all SBLT/ASBLTs). The survey is notionally about the culture of the Warfare branch and its officers. By its very nature, the branch is more operationally orientated than engineers and Supply & Logistics – spending significant time forward-facing, at sea, where the skills of naval warfare officers are honed over years, not months. The survey biases against the experience of the trained warfare officer, and in favour of an untrained junior strength.

Twenty-three percent of respondents were female, compared to 19.1% in Navy at the time of the survey. From the statistics provided, women are between 5 and 7 times (based on the percentage of women in Navy in 2016/17) more likely to have 'experienced unacceptable behaviour in the past six years [2011-2017]', than men. This is significant. It may be that conditions are 5 to 7 times worse for women than men, and that this is therefore representative of the conditions Navy's female workforce is facing. Or that conditions are so biased in favour of men, that men do not feel like 'rocking the boat'. Or that other things are going on.

At one extreme, noting almost two thirds of those reporting 'unacceptable behaviour in the last six years' came from just over half of all the male interviewees (54%), it could be argued (without understanding biases and context) that removing women from the branch altogether could, statistically, reduce complaints by a third – with a commensurate improvement in morale and reduction in administrative loading. This would be patently absurd – but that is the point. Unverified as this analysis is, it builds its case on a reverse counterfactual: 'that more women in the warfare branch will necessarily improve conditions and the standing of the profession; while reducing unacceptable behaviour'.

MORE COMPLEX?

It is generally accepted that women are more complex physio-meta beings than men. By the same token, simplicity is a form of complexity (not the same as being simple!) – which may be a 'comparative advantage' males probably need!

A detailed and much caveated survey undertaken for and published in the British Medical Journal, Yingying Wang, et al (2013) – *Do men consult less than women? An analysis of routinely collected UK general practice data* – considered a population of 1.87 million men and 1.92 million women, registered in 2010 with 446 UK practices. Combining the age groups 0-20; 21-39; and 40-57, the paper reported that women (aged between 0 and 57) were 67% (two thirds) more likely to consult a GP, than a male. However, taking the age ranges 21-39, and 40-57, women were twice as likely to consult their GP, than a man. [3] Theoretically, based on this research, 35% female participation could mean half of sickbay attendance being women – with a 12.5% increase in demand (from current female participation rates), i.e., not a zero-sum gain.

BBC and Guardian [4] reporting on UK Military deaths in Afghanistan and Iraq between 2002 and 2014 identified 632 UK Service fatalities, of which: approximately 98.5% were male, with an average age of 27.8. 80% were British Army; 13% Royal Navy and Royal Marines; and, 7% RAF. During this time, there were 7,100 Combat Field Hospital Admissions; 2,200 Wounded in Action and approx. 7000 Casualty Evacuations. In 2008/9, at the height of the Iraq and Afghanistan Wars, 9.4% of the British Armed Forces were female, when it was estimated twenty percent of the deployed personnel were women. [5]

Based on these statistics, men were between sixty-seven (by fatalities) and 260 (by proportion of deployed force) times more likely than servicewomen to be killed or seriously injured in combat. Tragically, the impact upon defended-less women and children in 'civil' conflicts is worse than ever. [1] The question not asked is: 'what impact does this have on the morale of the force and equitable burden sharing as a whole?' Another question that emerges is 'on what empirical grounds do gender-based KPIs (supporting increased proportions of women) show the ADF will be more capable and better prepared for war?'

Statistics for fatalities and injuries in war bear some resemblance to the proportion of men suffering accidents in the workplace. The fatality rate for men is about 10 times that of women (5.7 per 100,000 versus 0.6 per 100,000 for women). [6] The average woman has 52% of the upper body strength and 66% of the lower body strength of the average man. Overall, the average woman is stronger than 2.5% of men, and the average man is stronger than 97.5% of women. Considering ball sports, "physiological and biological factors are understood to contribute to a female being two to 10

USS CAINE (22) was a *Clemson-class* destroyer similar to USS HATFIELD (231) but with its aft funnel removed. Was the CO, Lieutenant Commander Philip Francis Queeg USN the Corporate Psychopath, or Lieutenant Commander Thomas Keefer USN, the XO? (Reference: Wouk, H. (1951). *The Caine Mutiny.* New York: Doubleday.)

times more likely to suffer [ACL/ Ham String] injury compared with male counterparts". [7] These statistics might raise fundamental questions about gender-based KPIs being more about preference and quota to meet socio-political agendas, than deliver capability-in-practice. Another absurd (potentially offensive) KPI could be suggested 'that success will be declared when as many women as men are killed or injured on the front line'.

This returns to sections 18C and 18D of the RDA. It may be a long bow, but could this paper be interpreted as "offending, insulting, humiliating or intimidating another person or a group of people" in causing "words, sounds, images or writing to be communicated to the public", sufficient for secret charges to be brought by the AHRC? And would the defence of "fair and accurate reporting, or fair comment that is an expression of genuine belief" be sufficient defence in accordance with 18D for "any statement, publication, discussion or debate made or held for any genuine academic, or scientific purpose or any other genuine purpose in the public interest; or in making or publishing a fair and accurate report of any event or matter of public interest; or a fair comment on any event or matter of public interest if the comment is an expression of a genuine belief held by the person making the comment"?

IN WAR

The young ADFA cadets caught up in the Skype scandal – none of whom were Navy Midshipman – and cadets who subsequently reported to the Broderick led AHRC 'Audit' [8] were apparently aghast at the way politicians and APS officials had been allowed to interfere with the Chain of Command and dismiss Commodore Kafer, without due process or investigation. This is also borne out by some observations in the MWO report:

> Those aged between 17 and 27 (51% of respondents) reported "lower support for diversity; scepticism about the value of diversity; a perception that some groups receive preferential or special treatment, particularly when it comes to recruitment and promotion, and concern that increasing diversity might have a negative impact on capability".

These are all excellent observations raised by the respondents and need answering. They also suggest a generational juncture between Gens X & Y, and Millennials (representing the 17-27 cohort). [9] A question that needs researching is "whether diversity is having a negative impact upon capability"? Another question is 'whether Western Fourth-wave feminism emphasis that "women can do everything" may also be creating unrealistic expectations; leading to delusion and dissatisfaction amongst females confronted with existential, empirical facts of service to Navy and ADF?' For example, the survey identified that, "at start of career, women were 1.4 times more likely to aspire to Command than their male colleagues". By the time junior MWOs reached the Fleet, "male respondents were 1.7 times more likely to aspire to Command than female officers".

Aspiration to Command is fundamental to the values and expectations of the Maritime Warfare Branch. It is this that sets it apart from all other branches – *primus inter pares*. If almost 40% of its workforce no longer aspires to command (a third of them women), then what impact does this have on branch capability as a whole – and the generation of warfare expertise beyond proficiency? The empirical generation of command may require an aspiration rate of 68% (indicated by males) – from which two-thirds may, at rank and grade, make command? A significant proportion of female MWOs perceive barriers to command between the ages of 22-27, somewhat earlier than men who report similar perceptions in the 28-35 age bracket (when they are more likely to command). This may be a bias of age concentration amongst the genders and cohorts examined (more younger women and older males) – not revealed by the survey?

In the *Stress of Battle*, David Rowlands [10] identified that populations exhibited non-Gaussian performance. His examination of male tank battle crews revealed that, 10-15% of the crews (he called heroes), accounted for 80% of all tank kills, 60-70% (the majority) accounted for 20% of kills, and 20-25%% (he called zeroes) accounted for no kills at all. Surprised by his results, he sought to qualify against Kagan's [11] observation that '35% of children took unfamiliar events in their stride' and Leach's [12] estimation that

'15% of individuals keep a cool head in disaster and devise a plan to escape; 75% cannot decide between courses of action and seek further information; and 10% suffer from cognitive dysfunction'. These compared to Marshall's [13] Korean War analysis of post combat interviews in which 15% of the population exhibited 'Brave' behaviour and Wigram's suppressed findings from World War 2 (see Foreman [14]) of three groups: Brave, 25%; Intermediate, 50-59% and Timid: 16-25%. Rowland also noted the 'high correlation of decorations awarded to previous generations of the same [hero's] families'. [10]

In a Radio National podcast *Workplace bullies—and corporate psychopaths* [16], the program considered corporate psychopaths: 'high functioning individuals who are superficially charming, egotistical, and emotionally disconnected but who harm others publicly, ridicule coworkers, lie compulsively, and take credit for other's accomplishments'. Broadly it was agreed that such individuals represent about 1% of the general public, and about 4% of corporate directors. An underlying assumption of the program was that 'women are less likely to bully than men'. In a study into workplace bullying of five hundred and eighty-one respondents (52% male; 48% female), Charlotte Rayner found that two-thirds of bullies were men but that males were 4.5 times more likely to bully other men than women, and females were 1.3 (1.28) times more likely to bully other women than men. [17] Unsurprisingly, perhaps, other studies have shown that women much prefer to work with/ for men, than they do with women – whereas the reverse does not apply. [18]

Hakim [19] and Wolf [20] suggest, in terms of numbers, there are three to four times as many men as there are women who choose to follow a professional career path to senior/ elite positions. According to Wolf, Professional Women (often childless, whose main priority is employment; who gain qualifications with the intention of working and have invested significantly in education for career advancement) make up about 20% of a (Western) female population and 'lead lives that are increasingly like those of the men beside them'. [20] 'At the senior professional level (below the elite 0.01%), 50% of Class 1 jobs are held by women and there is no or very little pay-gap at these levels'. [19] The gap, according to Wolf and Hakim, comes lower down the professional rankings and amongst women not belonging to the 20% and reflects two things: 'first the lives of non-professional women, the vast majority – the "other" 80% whose lives are very different; and secondly, the dilemmas faced by women when they have children and the choices they make'. [20] Hakim further identifies 60% of females as 'Adaptive' – who show the most variety 'and includes women who want to combine work and family; want to work, but not totally committed to a work career; obtained qualifications with the intention of working' and generally 'balance between family values (caring, sharing, non-competitive, communal focus on cohesion)' and 'Marketplace values (competitive rivalry, achievement orientation, individualism, excellence)…of work-centred (often childless) Professional women]'. [19]

Table 3:
Additional Commentary

- RFI data also indicates in 2016-2017, over a third of those who separated from the MWO category were from the Lieutenant rank.
  - This is consistent with RFI data, which shows that almost all female MWOs who separated from the Navy in 2016–17 were ranked Lieutenant or below.
  - RFI data indicates as at June 2017, women accounted for about one fifth of the MWO workforce. They also accounted for almost 1/5th of separations in the 2016-17 financial year.
- A greater proportion of women than men are undecided or do not intend to remain in Navy.
  - This is a particular issue among women who have served 10 years or less in the MWO category and who fall within the age bracket of 22 to 35 years old.
- Three quarters of male and over 80% of female survey respondents supported increasing the representation of women in leadership positions.

AN ETHICAL & IMMORAL DILEMMA?

Arguments in peacetime balance codes of conduct, rights and ethics, with aspirations for equality and gender/ racial diversity, against welfare. Concomitantly, warfare remains the ultimate non-Gaussian discriminator, where automation will never cover all eventualities. In peer-on-peer conflict, our average fitness, strength, capability, and ability to KBO, will need to be more than the enemies. A question may be 'at what point an organisation established in the discipline of war becomes more about welfare than warfare?' And, 'when do socio-political aspirations start impacting warfighting capabilities such as effectiveness, efficiency and the preparedness of the force as a whole to be a thinking and fighting Navy, in being'?

Navy identifies its underlying values to be: 'Honour; Honesty; Courage; Integrity; and Loyalty' – its essential moral compass, upon which decisions are made and taken in complex, uncertain instabilities such as war. These virtues are associated with the higher values of morality; whereas ethics are to do with codes of conduct, rules of engagement (ROE), and codified rights associated, for example, with a profession. The two are often confused and conflated. It may be possible to act ethically and to do things right (by the book) – but to be acting immorally in terms of doing harm by imposing values on others. John Stuart Mill recognised this when he observed 'you cannot impose virtue'. [21] By the same token, one could be acting morally in the interest of higher values in refusing an unlawful order – the *Nuremberg Test* – but judged to be professionally unethical. The reverse does not necessarily apply. In war, leaders may require to take nuanced complex questions based upon their moral understanding at the time that might, on one level, go against ROE and be considered unethical, even temporally amoral – but may later be judged moral and in the higher values of humanity and to have done less harm. The *Srebrenica Test*.

The imposition of rights – as by the AHRC – may be ethically virtuous and politically correct, but may also be immoral and create conflict in spaces where violence did not previously exist. As Churchill commented:

> True genius resides in the capacity for evaluation of uncertain, hazardous, and conflicting information.

Whereas most feminists would concur that there are more stupid men than women – and evidence seemingly supports this – some research also suggest that there may be more male geniuses than women. [15] If, as seems likely, populations are not entirely Gaussian and female and male populations vary across their respective

spectrums, then the imposition of rights for one, will inevitably bias against the other. Given the numbers and proportions involved, at more senior levels, statistically men may require to be demonstrably 10-15 % better than a [professional] woman to secure a job. Inevitably, equivalency-biasing leads to *Normification* and 'Regression beyond the Norm' – so removing variety, experience and capability from selection criteria, in favour of diversity. Individuals are judged more on keeping good kit and strict adherence to Workplace Health & Safety, than capability. [Unpublished Research]

Organisations such as the AHRC have been established to implement and police rights – rather than uphold civil institutions of Commonwealth, including Government, the Judiciary, the Defence Forces or sporting codes. This poses an existential question of many institutions, who might ask 'when do organisations (such as the AHRC) declare success and put themselves out of business?' For without a killer-KPI, rights-based organisations may simply go on displacing accountable democratic power and subsuming unto their own structures for ever more. Think EU and Brexit.

The AHRC is judge, inquisitor, jury and enforcer. It could be suggested this paper calls into question the impartial standing, veracity and biases of the AHRC. This may appear outlandish – but think of those officers, male and female, working in a disciplined organisation, where dissent is generally not recognised as loyalty. And think how much harder it is for them to "speak truth to power" – other than through the NLA and publications such as *The NAVY*?

Before embarking further on the experiment, it is suggested that Navy seeks to address three questions:

1. What proportion of men to women is affordable and sustainable and will allow the force to grow as a whole without offsetting variety and capability for diversity?
   a. Empirically one-in-five might be 'about right'; 25-35% too many?
   b. Counter-intuitively, increasing the number of women serving, requires proportionally increasing the number of men recruited. It certainly does not mean switching off male recruiting all-together, even for short periods or specific entries/ courses.
2. What impact does diversity have on capability; including the morale of the force; its moral standing and equitable burden sharing as a whole? Noting also Napoleon's maxim 'that moral is to the physical, as three is to one'.
3. On what empirical grounds do gender-based KPIs (supporting increased proportions of women) show the ADF will be more capable and better prepared for war? Where is the research and evidence? ■

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3RD PLACE

COMMAND DECISIONS DURING THE BATTLE OF THE RIVER PLATE

By Geoff Crowhurst

A series of decisions by two opposing commanders led to the first major naval battle of World War Two. This paper examines decisions made on both sides leading up to and during the battle of the River Plate that shaped the outcome of the engagement, and the subsequent loss of the GRAF SPEE, the first major German unit sunk during the war.

ADMIRAL GRAF SPEE a *Deutschland-class* Panzerschiff nicknamed a pocket battleship by the British seen at the 1937 Spithead Review with HMS HOOD (51) and RESOLUTION (09) in the background.

INTRODUCTION

Although GRAF SPEE was derisively named a "pocket battleship" by the British, it has been labelled a battlecruiser or heavy cruiser by historians, who still argue over it today. The Germans called it *panzerschiffe* – armoured ship. Packing six 11inch guns in two triple turrets, secondary armament of 4x 5.9inch guns and 4x 4inch guns, and an armoured belt designed to protect it from 8inch shells, it was able to dominate enemy ships up to heavy cruiser class. It's revolutionary diesel engines gave it a maximum speed of 28.5 knots and a range of 30,200km, making it the ideal commerce raider. It's commander, Kapitan Hans Langsdorf had served on GRAF SPEE as a Staff Officer during deployments to Spain in 1936-1937 supporting the Nationalist forces in the civil war. He took command of GRAF SPEE in October 1938. However, he had limited command experience and was better known in the Kreigsmarine as an administrator and planner.

GRAF SPEE sailed from Wilhelmshaven in August 1939 in preparation for war with Britain, with orders to undertake commerce operations against Allied shipping and avoid combat at all costs. Over the next two months GRAF SPEE sank nine ships, narrowly avoided contact with Allied naval vessels on several occasions and tied down a disproportionate number of enemy vessels.

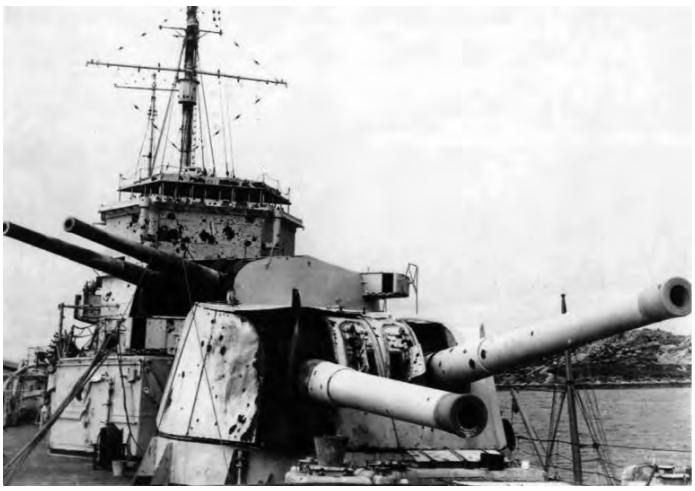
By late November GRAF SPEE had eight separate RN task forces looking for it. Force G was one of them, commanded by Commodore Henry Harwood, consisting of heavy cruisers HMS CUMBERLAND and HMS EXETER and light cruisers HMS AJAX and HMNZS ACHILLES. Harwood had joined the Navy in 1904 and saw combat during World War One. He was appointed Commodore and given command of Force G in 1936. CUMBERLAND was Harwood's heaviest unit, armed with 8x 8inch guns. Next came *Exeter*, with 6x 8inch guns. AJAX and ACHILLES were both *Leander-class* light cruisers armed with 8x 6inch guns. Force G was the RN's South American Division and as such was scattered along the South American coast on various tasks.

COMMAND DECISION #1 – WHY DID LANGSDORF CHOOSE THE RIVER PLATE?

By November Langsdorf had decided to head for home and during an officers conference on the 26th, outlined his plans to return to Germany. In early December GRAF SPEE was back in the South Atlantic following a short sortie into the Indian Ocean. It had been at sea for three and a half months supported by the tanker *Altmark*. On 3rd December GRAF SPEE intercepted and sunk *SS Doric Star*. Two days later it sank *SS Tairoa*. These were its 7th and 8th victims. Both ships managed to send radio messages stating that they were under attack from a German surface raider and both messages were received and acknowledged. Langsdorf now knew that his position was known to the RN. On 7th December GRAF SPEE intercepted its final victim, *SS Streonshalh*. The boarding crew found secret documents detailing allied shipping routes which convinced Langsdorf to head for the mouth of the River Plate to attack shipping coming from Montevideo and Buenos Aries, where he expected to find numerous individual targets or even an allied merchant convoy. By creating a diversion off the River Plate and the illusion that he was heading south, he hoped to draw the majority of the RN hunter groups south while he turned north, back to Germany.

COMMAND DECISION #2 – WHY DID HARWOOD CHOOSE THE RIVER PLATE?

Thanks to the two consecutive raider reports, Harwood knew a German raider was in his area of responsibility. By plotting the positions of the alerts he could see that the enemy was approaching the east coast of South America, probably arriving on 13-14th December. Concluding that the raider would want the best chance of intercepting merchant traffic, he ordered Force G (minus CUMBERLAND, which was refitting in the Falkland Islands) to rendezvous off the mouth of the River Plate, which was the busiest port on the east coast.



Damage to HMS EXETER during the Battle of the River Plate.

Force G assembled on 12th December. Harwood planned to split his force into two groups and attack "...at once by day or night...". The light cruisers would stay together, EXETER would operate alone. Harwood aimed to "... take the enemy by surprise and cross his stern.", hoping to force the raider into a stern chase and split the fire from its main armament. All three ship's captains were left in no doubt as to their commander's intentions and their part in the coming battle. Force G spent 12th December rehearsing these tactics and formations.

Force G encountered GRAF SPEE at almost exact time that Harwood predicted. At 0610 on 13th December lookouts on AJAX (Harwood's Flagship) spotted smoke to the northwest. EXETER was detached to investigate and at 0616 signalled "I think it is a pocket battleship". Two minutes later GRAF SPEE fired its first salvo and battle was joined.

COMMAND DECISION #3 – WHY DID LANGSDORF CHOOSE TO ENGAGE?

Langsdorf's orders specifically instructed him to avoid combat with enemy warships. Any damage to a raider, far from its home port and repair facilities could prove fatal. However, as he expected to find multiple targets and even a convoy, he was also expecting accompanying warships. Langsdorf disliked raiding, no matter how successful, and was looking for actual combat prior to returning to Germany. He had already told his officers, during the 26th November conference that he intended to fight through any escorts to get at a convoy.

Lookouts on GRAF SPEE had spotted Harwood's force at 0552. However, they reported one heavy cruiser and two destroyers. This was well within GRAF SPEE'S capabilities to deal with. Langsdorf had time enough to turn away and retire, but chose to engage what he took to be a light escort group. Then at 0610, the lookouts amended their report, correctly identifying the two light cruisers, still within GRAF SPEE'S capabilities, if correctly handled. By now Langsdorf was committed to action and continued to close with the enemy. GRAF SPEE'S 11inch guns outranged Harwood's force by over 10000 metres. GRAF SPEE'S lookouts spotted EXETER at 31000 metres however Langsdorf inexplicably allowed the British to close to 20600 metres before firing, allowing EXETER to return fire just two minutes later and the light cruisers shortly thereafter.

HMS ACHILLES (70) under the Battle Ensign and the Flag of New Zealand, painting by Frank Norton, National Collection of War Art, Archives New Zealand.

From the outset, the British followed Harwood's plan, splitting their force and approaching on diverging flanks. Langsdorf concentrated fire onto EXETER, recognising it as his greatest threat. Both GRAF SPEE and EXETER straddled on their third salvoes. A near miss from GRAF SPEE caused shrapnel damage and casualties to EXETER'S stern while the fourth salvo landed a direct hit. 'B' turret was struck and put out of action, with shrapnel cutting down all but three of the bridge crew, Captain Bell being among the survivors. EXETER also landed an early hit on GRAF SPEE, destroying a 4inch gun and killing it's crew. This same shell penetrated the armoured belt, causing further damage.

EXETER was hit several times in rapid succession, taking increasing damage from GRAF SPEE'S heavier armament, starting fires and forcing Captain Bell to use a lifeboat compass to steer by, after all bridge instruments and communications were knocked out. Just as Langsdorf looked set to finish EXETER, he was forced to shift his guns onto the light cruisers, whose fire was both rapid and accurate. An early German salvo from their 5.9inch guns near-missed ACHILLIES, with shrapnel killing three men in the gun director tower, destroying the radios and tearing several large holes in the superstructure.

At 0632 and again a few minutes later, EXETER fired torpedoes. Launched at too great a range to be a threat, it still caused Langsdorf to turn to comb the tracks. He laid a smoke screen as he did, hiding GRAF SPEE from the light cruisers, whose fire became ineffective. He now turned GRAF SPEE'S guns back onto EXETER, landing three heavy hits close together. 'A' turret was put out of action, an anti-aircraft mount was destroyed and numerous holes were punched through the hull, leaving it listing and on fire. EXETER, now with only 'Y' turret firing under local control, was in poor shape

Rear Admiral Sir Henry Harwood Harwood KCB OBE (19 January 1888 - 9 June 1950) meeting the British Minister to Uruguay after the scuttling of GRAF SPEE.

The GRAF SPEE after being scuttled by her crew in the River Plate, 17 December 1939.

and a few more hits would likely prove fatal. Inexplicably, Langsdorf now turned his guns back to the light cruisers, although at this point they posed no immediate threat.

By 0700 Langsdorf again ordered smoke to deter the light cruisers, who were closing the range, keeping up rapid fire and scoring hits. At 0710 GRAF SPEE turned away from the light cruisers and briefly resumed firing on EXETER, landing another hit. By 0715 the light cruiser's fire was concerning Langsdorf enough for him to make several rapid and violent course changes, which degraded the accuracy of GRAF SPEE'S fire. GRAF SPEE also fired a torpedo at the light cruisers, who evaded it with ease.

Harwood had closed to distract Langsdorf from EXETER and now Langsdorf turned on the light cruisers with everything he had. GRAF SPEE quickly straddled, then hit AJAX, knocking out both aft turrets. GRAF SPEE was also hit, but the 6inch shells were not doing significant damage. At 0729 EXETER'S remaining turret stopped firing due to flooding and Captain Bell disengaged, leaving the battle to limp away to the Falklands for repairs. By 0740 both sides had disengaged, almost simultaneously. GRAF SPEE sailed west towards the coast of South America with Harwood's light cruisers shadowing.

COMMAND DECISION #4 – WHY DID HARWOOD DISENGAGE?

Harwood's decision was based around the survival of his force. EXETER was no longer combat effective and was sailing for the Falkland's, with no guarantee of actually making it. AJAX had two turrets out of action. Harwood could see his 6inch shells were not causing any major damage to the enemy and was unable to close to effective torpedo range. Finally, just after 0725, he received a report that AJAX only had 20% of its ammunition remaining, although this later turned out to be incorrect. Now that GRAF SPEE no longer had to worry about EXETER, that meant Langsdorf could concentrate wholly on the destruction of the light cruisers, a task not beyond GRAF SPEE'S capabilities. Harwood therefore disengaged and set about shadowing the enemy, a job at which light cruisers excelled.

COMMAND DECISION #5 – WHY DID LANGSDORF DISENGAGE?

Langsdorf's decision to disengage has been subject to much conjecture. He did not discuss the battle with any of his officers nor mention his reasons for breaking off the action in any of his reports to Berlin or in his final letters, penned just before his suicide seven days later. The most commonly stated reason is his reluctance to lose the lives of any more of his crew, however this was not the only, nor most important factor.

At around 0740 Langsdorf had decided to disengage. Up to then he only had a few brief damage reports, indicating that GRAF SPEE had only taken minor damage, not enough to impede its ability to steam and fight. It is unlikely that he received any report on casualties. At around 0800 (20 minutes *after* disengaging) he made an inspection of the ship and saw the damage and casualties inflicted during the battle. He was shocked by sight of the dead and the suffering of the 60 wounded men in the ship's infirmary. He learned of the damage to the ship, including a hole in the forward hull, which would admit water in high seas (high seas being a fact of life in the North Atlantic in December/January). The water desalination plant and the galley were both destroyed. The Arado seaplane was burnt out, and while a second (disassembled) plane was stored in the hangar, it was of no use due to both aircrew being among the dead. The worst damage was the destruction of the oil purification plant, which prepared GRAF SPEE'S diesel oil for use by the engines. This left Langsdorf with insufficient fuel to return to Germany. One unpleasant surprise for Langsdorf was finding out that GRAF SPEE'S armour could be penetrated by 8inch shells, when the armour was specifically designed to prevent this. However all damage was repairable if GRAF SPEE could get time in a base repair facility and the ship's surgeon was confident that the infirmary could handle the wounded. Along with the damage and casualties, GRAF SPEE had only 186 11inch shells remaining, enough for only 20-40 minutes of battle.

Langsdorf disengaged before knowing the extent of his ship's battle damage and casualties. His ship's combat ability was intact and more than adequate to deal with the cruisers. We need to look more closely at Langsdorf himself. As a junior officer, he won the Iron Cross 2nd class at Jutland in 1916, and the Iron Cross 1st class later in the war, serving in minesweepers. During the interwar period he served in administration and planning postings including joining GRAF SPEE in 1936 (as a Staff Officer to Admiral Boehm). He took

command of the ship in October 1938. Since the war began, he had been boarding and sinking merchant ships and avoiding contact with the enemy. The River Plate was his first combat experience in 21 years.

At around 0700 Langsdorf was wounded by shrapnel in the left arm and shoulder, which bled heavily until bandaged. At 0715, a salvo from ACHILLIES knocked him unconscious for just over two minutes. On regaining consciousness Langsdorf's subsequent conduct suggests he had concussion. According to the crew he became vague and indecisive. Prior to being knocked out he would inform the gunnery officer of any impending course change, allowing the guns to adjust. Afterwards however, he made rapid course changes without warning, and GRAF SPEE'S accuracy suffered. Concussion and the stress of sudden, violent combat could easily have effected his ability to make clear decisions.

Langsdorf headed for Montevideo, with Harwood's cruisers following. On several occasions GRAF SPEE turned and engaged the cruisers when they got too close, without scoring any hits, but forcing the cruisers to drop back. Langsdorf made no attempt to try to evade the cruisers, although he had a fair chance of doing so after night fell, as the cruisers were not equipped with radar while GRAF SPEE was.

COMMAND DECISION #6 – WHY DID LANGSDORF CHOOSE MONTEVIDEO?

Immediately after his inspection tour at 0800, Langsdorf informed his officers of his decision to head for Montevideo. His officers felt it was the wrong decision, but didn't argue with their captain. Langsdorf chose Montevideo as it was the closest neutral port where he could seek shelter. He had other choices, in particular Buenos Aries, Mar del Plata and Bahia Blanco in Argentina. The Argentine government was pro-Nazi, and Langsdorf was assured of assistance. However, the approach to Buenos Aries was too shallow and muddy for GRAF SPEE and the other ports too far away. At 2350, GRAF SPEE arrived in Montevideo harbour.

COMMAND DECISION #7 – WHY DID LANGSDORF SCUTTLE GRAF SPEE?

While his crew got on with making repairs, Langsdorf stepped ashore into a diplomatic storm. The Uruguayan Government wanted GRAF SPEE gone. The British wanted to keep GRAF SPEE in port until they assembled a force capable of sinking it. Hitler wanted GRAF SPEE to break out and if necessary, go down with guns blazing but was persuaded by Admiral Raeder to leave the final decision to Langsdorf. It is unclear what Langsdorf wanted. He requested a 30 day stay for repairs, but was granted only 48 hours. However, late on the morning of the 14th he stated that he would not "...sail out and commit suicide with all my crew". It is probable that he was already considering internment.

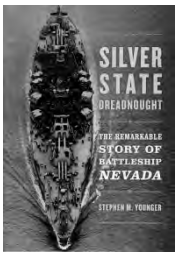
On the 15th Langsdorf and some of the crew attended the funeral for their fallen shipmates. Negotiations continued with Uruguay and Langsdorf was granted a further 36 hours. The British now fed the German authorities misinformation that the aircraft carrier HMS ARK ROYAL and the battlecruiser HMS RENOWN were gathered off Montevideo. In fact, it was still just Force G, Harwood's two light cruisers reinforced now by HMS CUMBERLAND.

Captain Langsdorff at the funeral of crew members killed in the Battle of the River Plate. Note: Nazi salutes being given by many members of the clergy.

Finally Langsdorf believed that he had no option but to scuttle his ship. He believed GRAF SPEE couldn't fight its way through the heavy force he was convinced awaited him. He didn't believe he had the right to sacrifice the lives of his men for a gesture of defiance, given GRAF SPEE didn't have enough fuel to reach Germany. To spare his men's lives and to prevent his ship being interned and handed over to the British, he decided to destroy it. On the evening of 17th December, he and a skeleton crew sailed GRAF SPEE out of Montevideo harbour where it was abandoned then spectacularly blown up. After ensuring that his crew would be safe, Langsdorf killed himself on 20th December.

The decisions of both commanders led to the battle of the River Plate. Langsdorf wanted a battle before heading back to Germany and Harwood positioned his command where he believed he had the best chance of intercepting the raider. Harwood planned and rehearsed his tactics in advance and ensured that his subordinates knew exactly what he expected from them. Langsdorf merely reacted to Harwood's moves and then withdrew at a point where he could have dealt the British a decisive defeat. He scuttled GRAF SPEE because he believed himself to be outnumbered and wanted to protect the lives of his crew. While Langsdorf is rightly remembered for his chivalrous attitude and good treatment of his prisoners, Harwood is largely overshadowed when in fact his planning and conduct of the battle, pursuit and blockade of GRAF SPEE were exemplary. ■

Historical Note: the hulk of the GRAF SPEE was bought by a salvage company, acting as a front for the British Foreign and Commonwealth Office and the Royal Navy. The Radar waveguides were stripped from the hulk, along with other salvageable technology. The wave guides allowed Royal Navy Admiralty scientists to calculate German radar operating frequencies for EW detection and jamming (ECM) purposes. The waveguides are currently on exhibit at the Weapon Engineering Museum located at HMS COLLINGWOOD, Fareham, Hants, UK.



SILVER STATE DREADNOUGHT

The Remarkable Story of Battleship Nevada
Stephen M. Younger
USNI (15 Nov 2018)
ISBN-10: 1682472892
ISBN-13: 9781682472897
Hardcover: $75.00

Interestingly, Stephen M. Younger is a physicist and President of the National Laboratories in Albuquerque. He writes convincingly and eloquently about the USS NEVADA (BB-36), from her revolutionary design as a super-Dreadnought, through to her sinking by the US Navy (after 5 days of battering) off Pearl Harbour in 1948, having survived the Able and Baker Nuclear Tests in 1946 (as part of Operation Crossroads). One of those rare lucky and happy ships – by all accounts – NEVADA was the only battleship to get underway during Pearl Harbour, before sinking in shallow water where she could be salvaged. Following repairs, she undertook convoy duties in the Atlantic before joining the invasion Fleet at D-Day (with HMS PRINS ALBERT), and then returning to the Pacific and providing naval gunfire support at Iwo Jima and Okinawa (the largest amphibious landing of all time, including D-Day). As old sailors know, some ships just exude personality from that combination of steel, sailors, and salt from the moment their keel is first laid. They shine, and taken on a personality that defies rational explanation – they become a lore unto themselves. Younger gets at this and more besides – telling a remarkable story of a great ship. He tells the story of ship and sailors, from the "Cheer Up Ship", to the beloved "Old Maru". A great book in the tradition of all navies – an excellent read.

THE LUCKY ALBERT

David Peate
Inscope Books (April 2018)
Peate©2018
Softback version from Author
$25.00 plus P&P
98 Booker Bay Road,
Booker Marine, NSW 2257

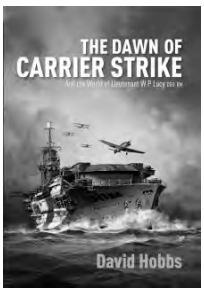
The Painting of HMS PRINS ALBERT (LSI 435) on passage to the disastrous 1942 Dieppe Landings was painted by Lance Corporal Brian J. Mullen Royal Marines, who was on board at the time serving with No. 4 Commando. Mullens was killed on D-Day, 6 June 1944, close to the Pegasus Bridge, having returned to help a wounded Commando. We will Remember. (Image National Army Museum).

This is an unusual book for a number of reasons. First, it is written by an amateur historian (and chemical engineer by background); secondly it is a fictional account of a great British auxiliary "warship", taken up from trade during Dunkirk, and thirdly, although a fictional account it is also historically grounded in the life and times of the author's Great Uncle, the ship's Captain Ben Peate (Lieutenant Commander, DSC, RD, RNR). The remarkable story of HMS PRINS ALBERT takes us from the beaches of Dunkirk, through to D-Day, and then joining the British Pacific Fleet and the Pacific amphibious campaigns of 1945; to surrender of the Japanese and the return of Prisoners of War – before the ship is returned to service as the *MV Prins Albert*, in the Belgium Railway Line and finally decommissions in 1968. This is a rare book, the authorship – as the author himself would attest – does not always match fact with prose but the story Peate tells is uplifting and courageous. Perhaps a book of another time, for our times. Well worth a read – if you can get a copy from David (address supplied).

WINNING ARMAGEDDON

Curtis LeMay and Strategic Air Command, 1948–1957
Trevor Albertson;
Foreword by Conrad C. Crane
USNI (15 May 2019)
ISBN-10: 1682474224
ISBN-13: 9781682474228
Hardcover: $60.00

Crane is a former U.S. Air Force Officer and congressional staffer, and currently the Dean of Instructional Services at Lassen College, Susanville California. This is an essential read for those contemplating deterrence, and the use of nuclear weapons in the formulation of mutually assured destruction (MAD). Policies that presupposes that in certain circumstance, a nuclear strike will be enacted. This led to the formulation of first and second strike policies – that it was necessary for the nuclear force to survive a first attack against it, so as to be able to launch a second strike. Inevitably, this led to the re-design of nuclear deterrence forces – and to the development of submarine nuclear strike forces. In the 1960s through to this day replacing (largely but not completely) the U.S. (and Allied) Strategic Air Force Command, with submarine deterrence forces. This model has largely survived the end of the Cold War (1989-1992) but, in more recent years, with the U.S. pulling out of the Intermediate-Range Nuclear Forces Treaty (INF) with Russia, the balance and corroborating the balance had become increasingly difficult for the U.S. to achieve – leading, in part, to the breakdown of trust necessary to assure MAD. Potentially also leading to LeMay's contested argument for striking first in a potential nuclear war and (Crane's) argument that it was this that shaped U.S. Victory in the Cold War. Essentially a policy of pre-emption replacing prevention through deterrence. Given the threat the U.S. currently perceives it is facing, and the need to rebuild rapidly its conventional (and nuclear) arsenals, the move may not be unexpected. It is nevertheless suggesting a re-balancing of power and forces, that other Allies might find it difficult to comprehend and keep pace with – for example, the UK and Australia. Whereas Le May hoped the potential of pre-emption might diffuse the possibility of nuclear war, this was never put to the test. And the weakest link in such a theory is unlikely to be the U.S. but its allies – unable to pre-empt and not part of the umbrella. A good book, worthy of more detailed discussion.

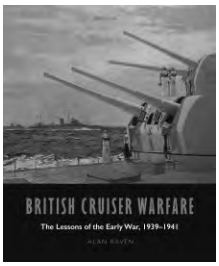


THE DAWN OF CARRIER STRIKE

The World of Lieutenant W P Lucy DSO RN
David Hobbs
Seaforth Publishing,
Pen & Sword Books
(6 Mar 2019)
ISBN: 9781473879928
Hardcover: $60

There are potentially unhappy parallels, which David drew on in his two papers for *The NAVY* (2019): Rebuilding the Commonwealth Navies - Part I, Vol 81, No. 3, pp. 8-11, and Part II, Vol 81, No. 4, pp. 7-10, and the interwar years when the Royal Navy lost control of its own air power to the RAF, in 1918, until regaining control (too late for the early Pacific Campaigns) in 1937. As a result, the Royal Navy fought WW2 on the back foot, succeeding despite-doctrine in the

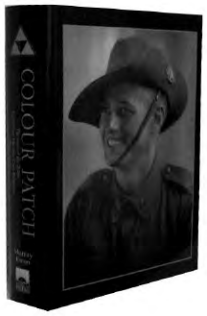
lost Norwegian campaign, which this book covers – before being vindicated in November 1940 at Taranto (beyond this book). The book follows the remarkable Lieutenant W P Lucy DSO RN, through to his death and posthumous award of the DSO off Narvick on 14 May 1940. Lucy was the UK's and Fleet Air Arms first Air Ace of the war, and led the development of dive-bombing ships. His tactics, thinking and elan were to provide the basis of the Taranto attack against the Italian Navy. The same tactics learned from, and then applied by the Imperial Japanese Navy at Pearl Harbour. This is an exceptionally well considered and written book, that tells the initial stories of carrier strike. The final stories being told by the US Navy and the remarkable British Pacific Fleet, about which David Hobbs has also written. An essential read – particularly as the RAN contemplates (as it must) restoring fixed-wing capability to the Fleet and FAA – applying its LHDs (HMA Ships ADELAIDE (L01) and CANBERRA (L02) as mini-carriers.



BRITISH CRUISER WARFARE

The Lessons of the Early War, 1939–1941
Alan Raven
USNI (1 Apr 2019)
ISBN-10: 1526747634
ISBN-13: 9781526747631
Hardcover $100.00

This is an extremely important book that traces the history of British Cruisers, from the failed designs of the 1930s, through to the up-armouring that was necessary to provide adequate offensive and defensive measures to fight through the unsuccessful Norwegian Campaign (see also the review of the *Dawn of Carrier Strike*, by David Hobbs), through to the retreat from Greece and the Eastern Mediterranean, victory at Taranto, the siege of Tobruk, and finally the lead up to Pearl Harbour and the loss of the Indian Ocean to the IJN at the end of 1941. There are some notable success, particularly in the early days of Electronic Warfare intercepts of the Italian, German and Japanese fleets. There are also harrowing stories of losses, when it was conviction and tradition – as articulated by Admiral "ABC" Cunningham RN – that kept the Fleet going. A significant proportion of the Mediterranean Fleet being supported by HMA Ships, and RN Cruisers crewed by New Zealand personnel. Raven details the stories of all these ships – in addition to providing full detail pull-out designs of ships as refitted during later stages of the war and their lives – including details of how the ships were lost. This includes recreating and understanding boards of enquiry. While it covers the detection and pursuit of the Armed Cruiser *Kormoran*, Raven does not provide significant detail of the loss of HMAS SYDNEY (19 Nov 1941) – instead concentrating largely on the Mediterranean War, and the war against Nazi Germany. Not the war looming in the Far East. The loss of SYDNEY perhaps provides a useful starting point, with Pearl Harbour and the loss of Singapore, into the next volume – 1942-1943? This would, logically, take Cruiser warfare up to the carrier age, and to taking the fight to Germany and Japan in 1944-1945. An excellent book, worth reading by anyone considering designing navies today, to fight tomorrows wars.



COLOUR PATCH

The Men of the 2/4th Australian Machine Gun Battalion, 1940-1945
Murray Ewen
Hesperian Press
(31 Dec 2001)
ISBN-10 0859053121
Hardcover $110.00

Murray is an amateur historian who writes with detail and care about the men of the 2/4th Australian Machine Gun Battalion, 1940-1945, from formation in Western Australia in 1940, through to Singapore (and capture in February 1942); Java and a similar fate building the Burma-Thailand Railway, and then to the Islands (Borneo and Sandakan), Thailand, and back to Singapore in August 1945. In a fulsome and detailed forward, the Governors of Western Australia, the Right Honourable Kim Beazley AC (and Patron of the NLA Western Australian Division) addresses the question of whether the costs were worth it. He leads from the author's research 'that the Japanese assessment of the cost of invading Australia would be too much' – based on their assessment of the Australian national character to "resist to the end". As Beazley concludes, as important as the contribution of the 2/4th was, "it is what they demonstrated about Australian character that counts". And this counts to this day – with regard to friends and potential enemies alike. Ewan has done us a great service through this book of humbled and detailed service to the men of the 2/4th Battalion, all named and their histories detailed. A book worth reading as we discover again the values that underpin our country – and come forward in times of adversity.

THE NAVY LEAGUE OF AUSTRALIA
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DEADLINE

Saturday 22 August 2020

Prize-winners announced in the January-March 2021 Issue of *The NAVY*.

The Navy reserves the right to reprint all essays in the magazine, together with the right to edit them as considered appropriate for publication.

HATCH: Contract signing for construction for the new combat supply ship HNLMS DEN HELDER (A834).

MATCH: USS COOPERTOWN (LCS 23) Launched by Lockeeh Martin Marinette Wisconsin.

DESPATCH: HMA Ships NEWCASTLE (06) and MELBOURNE (05) Sold to Chile HMAS NEWCASTLE departs Newcastle before decommissioning (Image CPL Craig Barrett).