Strategic importance of the Indian Ocean

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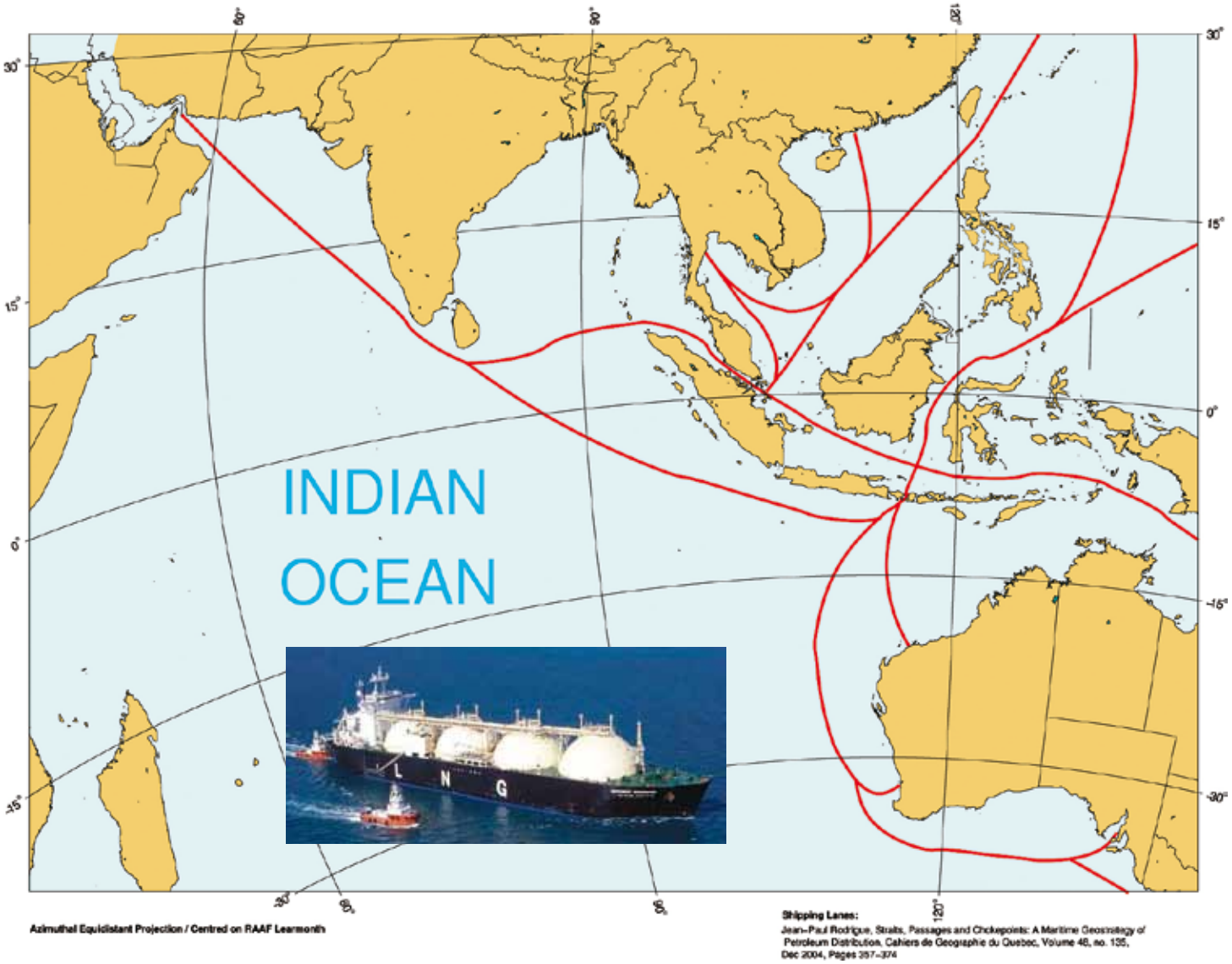


The Indian Ocean is of vital strategic importance to Australia, even if this fact has not been a prominent aspect of the ongoing defence debate in this nation. Media reports this year indicate that discussions with the United States are now under way over basing access in the Indian Ocean, while a Force Posture Review is now under way, which could see increased ADF basing in Western Australia.

At this time the ADF's "hub" for operations in the north of the continent is the Northern Territory, with principal ADF basing infrastructure in Darwin and Tindal. This reflects the "Indonesia-centric" thinking which pervaded Defence planning since Konfrontasi during the early 1960s, and has continued to dominate force structure planning in Canberra, despite the deep, pervasive and fundamental strategic changes arising from the industrialisation of Asia, and the resulting rise of China as a major regional power.

It is a sad reflection upon Australian defence planning and policy, that despite a good number of ministerial and parliamentary submissions on this subject dating back to 1999/2000, the Indian Ocean has not been given attention in Canberra until Pentagon planners decided that Indian Ocean basing might be important.

The Indian Ocean is of vital and growing strategic importance to Australia due to its increasing role in global energy transport, but also due to the growing economic importance to Australia of the rapidly expanding gas production infrastructure in the North-West Shelf region of Western Australia.

The Global Importance of the Indian Ocean SLOCs

The industrialisation of Asia began with Japan during the 1920s, and has been accelerating, as South Korea, Taiwan and most recently mainland China have industrialised, with India following suit. These nations collectively now account for much of global manufacturing activity, in areas ranging from heavy shipbuilding down to high density microelectronics.

Industrial economies are inherently voracious consumers of energy and raw materials, a reality observed first during the industrialisation of Europe, then the industrialisation of North America, and most recently, the industrialisation of Asia. This is reflected in high per capita national energy consumption in such nations, spread across transportation, industrial manufacturing, and consumers. Inevitably industrialised nations see a strong shift to individual ownership of housing and automobiles, with associated energy consumption and thus demand growing as a result.

A major motivation underpinning the Great War was competition over colonial raw materials and energy, between the established colonial powers, and latecomers on the European continent. The Second World War, while usually explained as a clash of ideologies, was motivated in a large part by German and Japanese demand for raw materials and energy, controlled at that time by the Western powers and Soviets. Much of the Cold War saw the West and Warsaw Pact nations fighting across the developing world, the prize being control of key naval chokepoints, and access to local energy or mineral resources. It is a simple reality that the greatest conflicts of recent times were the result of competition over access to energy and resources.

The Indian Ocean is at this time arguably carrying more maritime traffic than any other water body of its size. Much of this traffic comprises oil tankers and LNG tankers travelling to and from Persian Gulf terminals, enroute to Europe, and importantly, the industrial economies of the Far East.

A detailed study of the global shipping infrastructure by Prof Jean-Paul Rodrigue of Hofstra University shows that Asia is now the dominant destination for Middle Eastern petroleum/gas product. Even a decade ago Asia's consumption of Middle Eastern oil was around twice that of the European Union.

Most of the crude and LNG destined for Asia is shipped through the Straits of Hormuz, past the southern tip of the Indian subcontinent, and then via the Straits of Malacca, Sunda or Lombok in the Indonesian archipelago, and thereafter via the South China Sea, or lanes east of the Philippines, to terminals in China, Taiwan, South Korea and Japan.

Container ships carrying manufactured goods from Asia to Europe and Africa will also traverse these shipping lanes, as the shorter great circle path is the cheapest route in terms of fuel burn. Minerals and ores mined in Africa and destined for Asia will also travel via the Indian Ocean.

These traffic patterns in shipping will persist for at least two decades, until Persian Gulf oil and gas reserves are exhausted and other regions become dominant suppliers to Asia.

Persian Gulf oil reserves have crossed the 'peak oil' point, and these oilfields are now declining in output, as they are drained. Recent discoveries in the Americas of oil and gas in offshore locations, along with onshore oil and gas bearing shales, could well see a return to the global dominance of the Americas as the world's biggest energy producing region. Reserves are however not a measure of production capacity, and until these discoveries are further developed, the Persian Gulf will remain a critical energy producing region.

The lack of self-sufficiency in fossil fuels across Asia is a pivotal strategic vulnerability for all of these nations, but especially China, where the nation's sheer size drives up the demand for energy to fuel its transportation infrastructure, and military machine. China has some domestic oil reserves in East Turkmenistan, and is contesting access to some seabed reserves across the South China Sea. China is also constructing the world's largest Fischer-Tropsch synthetic fuel plant, intended to use coal as a feedstock. However, for the forseeable future China will remain heavily dependent upon oil and LNG imports, with Iran and likely Australia key LNG suppliers. At this time nearly 50% of China's oil imports arrive via the Indian Ocean, from Saudi Arabia, Iran and Angola. Current projections suggest that two thirds of China's oil consumption will be imports by 2030.

The strategic reality is thus that any nation or alliance which can control the sea lanes of the Indian Ocean can hold much of Asia hostage, including China. Control of the western Indian Ocean closes the chokepoint at the Arabian Sea, while control of the eastern Indian Ocean closes the chokepoints in the Indonesian archipelago.

Whether the chokepoints at the eastern and western extremities of the Indian Ocean are closed by coastal missile batteries, land based air power, submarines, surface warships, naval mines or some combination of these measures is immaterial, the effect is much the same. The flow of crude oil and LNG can be constricted, controlled or completely halted.

Historically, the Royal Navy held a dominant position in the Indian Ocean, displaced during the Cold War by the US Navy replenishing from Diego Garcia, and Soviet VMF operating from Goa. The Soviets long coveted a port in the region, but failed to secure one.

China has invested heavily in special relationships with Pakistan and Burma. Burma has seen upgrades to its airfields and ports, paid for by China, well in excess of any domestic needs. More recently, China commenced construction of an oil and LNG terminal at Kyuakpya in Burma, connected by pipeline to Kunming in China. This facility will reduce the recurring shipping cost, but also bypass the eastern chokepoint. This year has also seen reports suggesting that China may seek naval basing in Pakistan.

India has always maintained a strong naval and maritime patrol capability, intended in part to blockade Pakistan in time of war. India has upgraded facilities in the Andaman Islands to extend its footprint. It recently ordered new P-8 Poseidon LRMP/ASW aircraft in the US, abandoning a long established relationship with Russian suppliers.

Competition for control of the Indian Ocean is now well established.

Western Australia and the Indian Ocean

In geostrategic terms, Western Australia provides the ADF or an ally such as the United States a major advantage in covering the eastern Indian Ocean chokepoints in the Indonesian archipelago. Moreover, Christmas Island and the Cocos Islands provide valuable Forward Operating Base (FOB) locations for LRMP/ASW/ASuW aircraft, as well as diversion runways for long-range maritime strike operations deep into the Indian Ocean.

During the Second World War, a chain of airfields constructed across the Pilbara and Kimberley regions were used for exactly this purpose, including major airfields at RAAF Learmonth (Potshot) and RAAF Corunna Downs in the Pilbara, and RAAF Truscott in the Kimberley. The current RAAF Curtin is adjacent to the WW2 Derby airfield. RAAF and US Army Air Corps aircraft, including B-24 Liberator heavy bombers, attacked coastal targets and Japanese shipping across the region from these bases, with RAAF Corunna Downs used as a Main Operating Base (MOB).

Fremantle became a major logistical hub, and staging port for naval units. Perth hosted numerous training and logistical units, and a base for Catalinas carrying mail and passengers across the Indian Ocean.

Western Australia was thus a critical strategic asset during that period, an asset with few vulnerabilities, as the North-West was very sparsely populated, and with an economy dominated by cattle stations. Other than RAAF basing in the Pilbara and Kimberley regions there was nothing of strategic economic importance the Japanese could damage. That was the past. The reality now is that the North-West is becoming one of Australia's most

Chevron Gorgon LNG plant under construction on Barrow Island.

valuable economic assets and sources of export revenue, with a growing population.

Iron ore has been a major export from the Pilbara for decades and the current known reserves are expected to last for decades. Infrastructure development and heavy industry, especially shipbuilding, have produced strong demand in Asia, especially China. Manganese ore is another high value export.

The Kimberley region is claimed to produce almost a third of global diamond production, and is often regarded to be the largest single supplier globally. The Kimberley region is also home to other mineral mining operations, and the Ord River irrigation scheme supports tropical crop farming.

The jewel in the crown of the North-Western economy is, however, its gas and oil industry.

The first major oilfield was opened on Barrow Island, near Karratha, and peaked in production output during the 1970s, yielding mainly light crude oil and some gas. During the early 1980s, Woodside Petroleum developed the North Rankin A gasfield, using an offshore platform, seabed pipeline and large LNG production facility on the Burrup Peninsula, north of Karratha. It was followed in 1995 by the Goodwyn A platform, which routes its production output to the North Rankin A platform, and then to Karratha. WA Petroleum (WAPET), later subsumed by its parent Chevron, is now developing the Gorgon gasfield, with a major LNG facility under construction on Barrow Island. It is being followed by the Chevron Wheatstone project, which will ship gas from a platform northwest of Barrow Island to an LNG plant under construction near Onslow. Current planned production rates for these facilities are of the order of 50 million tonnes of LNG annually, with Wheatstone alone having expansion potential to 25 million tonnes annually. These production rates are well in excess of Malaysian and Indonesian LNG production, and will exceed the current production rate of Qatar, at this time the leading global LNG exporter.

The North-West Shelf gas and oil industry is a major national export revenue earner, and enables a range of other industries, such as ammonia production and alumina refining. A substantial proportion of Western Australia's electricity is generated from North-West Shelf gas.

The gas and oil industry are strategically of enormous value, but also present direct and indirect strategic vulnerabilities.

An opponent intending to damage Australia economically could produce significant effect by stopping LNG and condensate exports, an effect exacerbated by the flow-on effect of other industries in Western Australia which depend on gas supply to operate. Closing down North-West Shelf gas production closes down alumina production, and gas supply to manufacturing and residential users in Perth.

Lesser but still significant damage could be inflicted by threatening or interdicting SLOCs, thus preventing export product from the mining and gas/oil industries from reaching its destination.

In strategic terms, Australia is presented with a confluence of growing strategic exposure, due to the increase in the economic importance of the North-West, while increasing strategic competition over the Indian Ocean and its critical SLOCs increases the strategic importance of the North-West for siting military basing infrastructure, especially airfields.

It is important to observe that the LNG infrastructure in the North-West Shelf region is highly vulnerable to attack using Precision Guided Munitions. LNG storage tanks when full or near full store energy comparable to that in a tactical or strategic nuclear warhead, albeit not released as quickly. Nevertheless, an armour piercing, concrete piercing or shaped charge cruise missile warhead could easily penetrate the shell of such a tank and cause an uncontrollable fire. Other infrastructure such as offshore platforms, LNG trains, condensate scrubbing and storage facilities, and LPG plant is also vulnerable. A major concern with uncontrolled fires in such facilities is the BLEVE (Boiling Liquid Expanding Vapour Explosion), which is not unlike a Fuel Air Explosive (FAE) bomb in effect, levelling buildings and tearing apart infrastructure, while causing flash burns and fires.

The radar contrast of these facilities is sufficiently good that pilots used same as navigation references even thirty years ago.

The regional proliferation of modern submarines, armed with ASCMs, and often LACMs, means that any nation with the motive could convert much of the North-West Shelf infrastructure into scrap metal with one or two SSK sorties. Moreover, if the perpetrators did not own up to the attack, they could be very difficult to identify.

More overt but no less difficult to stop would be aircraft armed with ASCMs or LACMs. Later models of the Sukhoi Flanker flown from any number of sites in the Indonesian archipelago have the reach to hit these targets. LRMP aircraft and tanker-supported bombers could strike from the Asian continent.

In the Australian defence debate, any mention of such vulnerabilities typically elicits arguments about the motives and agendas of regional nations, inevitably concluding that India, China, Indonesia and other nations have no immediate motive to attack, and therefore the vulnerability should be ignored. The reality of past conflicts, where neutrals and bystanders have been attacked for any number of reasons, is always conveniently ignored. War materiel, such as energy products, minerals and metals, have been "fair game" on the high seas, in times of war, regardless of the flag flown. The sad truth is that in times of conflict, neutrality is no defence, and motives for attacks range from strategic necessity, through intimidation, to simple spite.

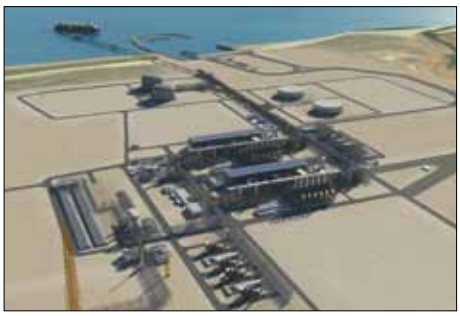
Protecting the North-West Shelf from commonly deployed modern capabilities across Asia is not feasible, unless there are some fundamental changes in planning for the ADF.

The current and planned RAAF fighter fleet is optimised for battlefield interdiction and counter-insurgency operations, in benign or unchallenging air combat environments. Interception of fast cruise missiles and delivery platforms is something the RAAF is not equipped for, and not planned to be equipped for. The planned RAAF tanker fleet is simply too small to support the kind of sustained Defensive Counter Air operations required.

More importantly, the basing infrastructure across the North-West lacks, with the exception of Learmonth, the runway strength for sustained high gross weight tanker operations. Fuel storage and replenishment infrastructure is also inadequate for sustained high intensity operations, especially involving tankers.

If an attacker is serious and intends to do a thorough job putting the infrastructure out of operation for years, then airfields defending the infrastructure would be the first targets, followed by the economic infrastructure of interest.

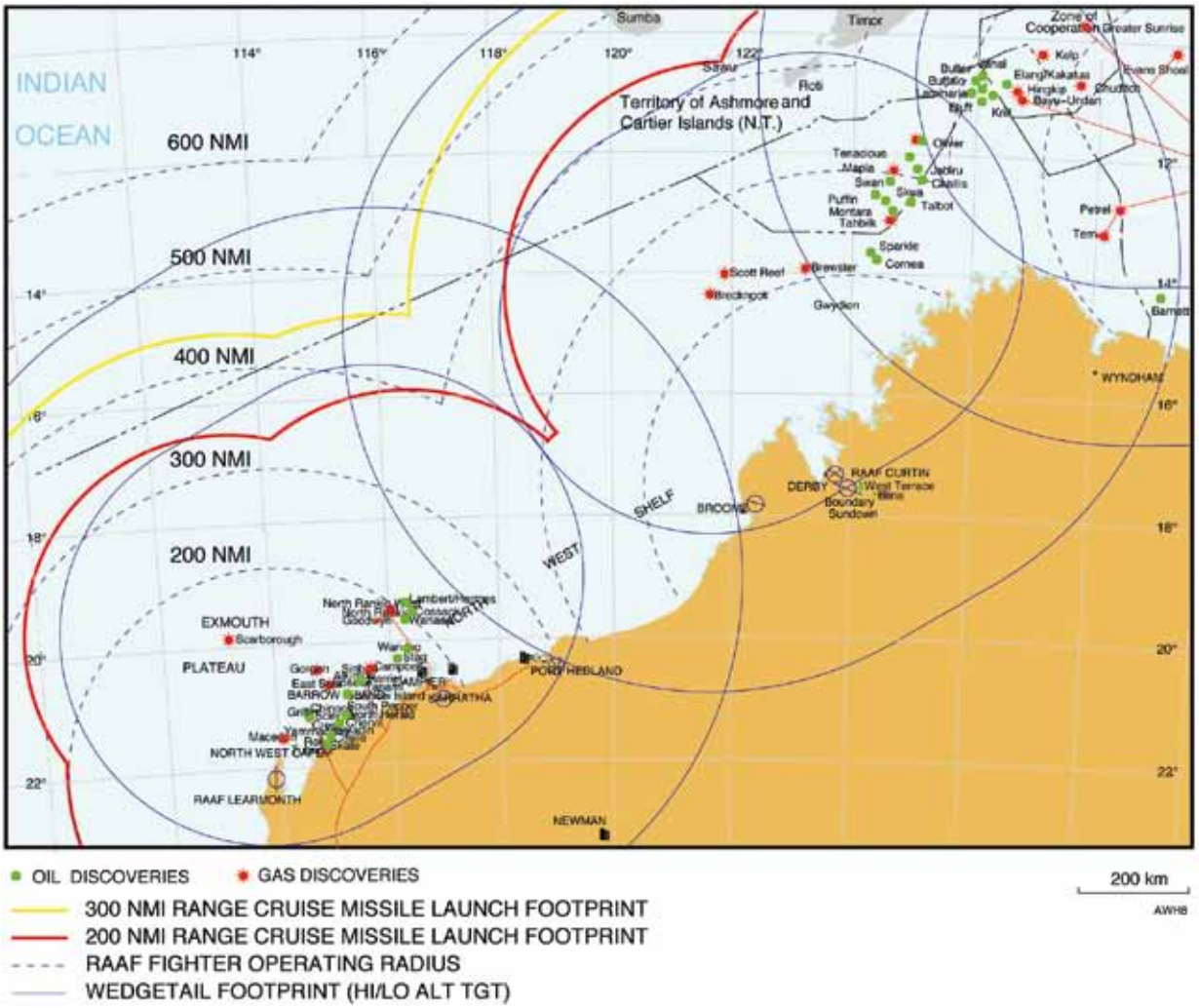
Woodside Pluto production platform.



Rendering of Chevron Wheatstone LNG plant under construction at Onslow.

Woodside Burrup Peninsula plant.

LNG tanker at the Woodside loading facility near Karratha.



NORTH WEST SHELF AND TIMOR SEA AIR DEFENCE ENVIRONMENT

The RAAF bases at Learmonth and Curtin have hardening, which would have been adequate decades ago before the global proliferation of PGMs, but not now. Revetments with sheetmetal 'carport' roofs are simply ineffective against cruise missiles and smart bombs, as the United States has proven repeatedly since 1972.

An argument often heard is that Australia need not worry about its inability to protect the North-West Shelf, since in any major conflict US Air Force expeditionary wings would be deployed to perform this task. This popular argument overlooks one basic reality, which is that the infrastructure across the North-West is simply unable to support and sustain a typical US Air Force expeditionary wing at anything beyond trivial sortie rates. Given ongoing budgetary pressures and national debt, it is an open question whether the United States would even have the available assets to spare in any major regional conflagration.

Strategic Perspective on the Indian Ocean

The coming decades will be a difficult period for Australia, in terms of maintaining a secure strategic position in the Asia-Pacific region. The industrialisation and economic growth of Asia is continuing, and the byproduct will inevitably be continuous increased military spending across Asia. A defacto unregulated supply of Russian and Chinese built high technology weapons, sold for profit and strategic influence, creates an environment in which any nation can procure almost any system, and the digital technology involved removes most of the training and support challenges that hampered the effectiveness of Soviet era weapons.

An important aspect of the military modernisation of Asia has been a significant increase in the reach of weapon systems. A Kilo class SSK with a cruise missile armament is not a reverse engineered U-boat, and a Sukhoi Flanker with F-111 class range is not a MiG-21 or clone thereof. While distance protected Australia in the past from most capabilities deployed in Asia, this is much less the case today, and any number of weapon systems deployed in Asia can now cross the sea-air gap.

The coming decades will be a period of strategic competition across Asia, involving nascent China and India, smaller nations across Asia, and the United States. Competition over access to energy, be it in situ seabed reserves, or SLOCs for resupply, will be a major theme.

Australians should not underestimate the intensity of this competition. In September this year an editorial in a major government censored Chinese broadsheet, cited in the Wall Street Journal, stated: "the South China Sea is the best place for China to wage wars" as "of the more than 1,000 oil rigs there, none belongs to China; of the four airfields in the Spratly Islands, none belongs to China; once a war is declared, the South China Sea will be a sea of fire. Who will suffer the most from a war? Once a war starts there, the Western oil companies will flee the area, who will suffer the most?"

Australia has had the luxury, since the Cold War, of not having to confront the risk of a high intensity regional conflict. As a result, Defence planning drifted into a "comfort zone" where minimal force structure and infrastructure, geared around Indonesia's capabilities, became the norm. This thinking remains deeply embedded in the psyches of a great many of our Canberra bureaucrats.

Addressing the changing strategic environment will require considerable thought, much planning, and careful investment, both in capabilities and infrastructure.

The essential starting point in basing infrastructure planning must be a comprehensive and appropriate upgrade of ADF basing across the North-West.

The Navy will need a FOB for submarine replenishment, in the Pilbara, to shorten transit times to patrol stations. A similar facility in the Cocos Islands would be also be valuable.

The RAAF bases at Learmonth and Curtin need expansion and thorough hardening, along with significant improvements to fuel storage and replenishment capabilities. More importantly, the Pilbara needs a MOB capable of supporting significant numbers of tankers, transports, and maritime patrol aircraft. The availability of abundant natural gas supply would permit in-situ production of JP-8 fuel using the Fischer-Tropsch process. In peacetime the product could be sold off commercially to amortise the plant investment.

The airfields in the Cocos Islands and on Christmas Island need upgrades to a standard similar as proposed for the Pilbara, but with smaller capacity requirements.

The region has fundamentally changed, and Australia must adapt. Failure to properly adapt will have unwanted consequences.