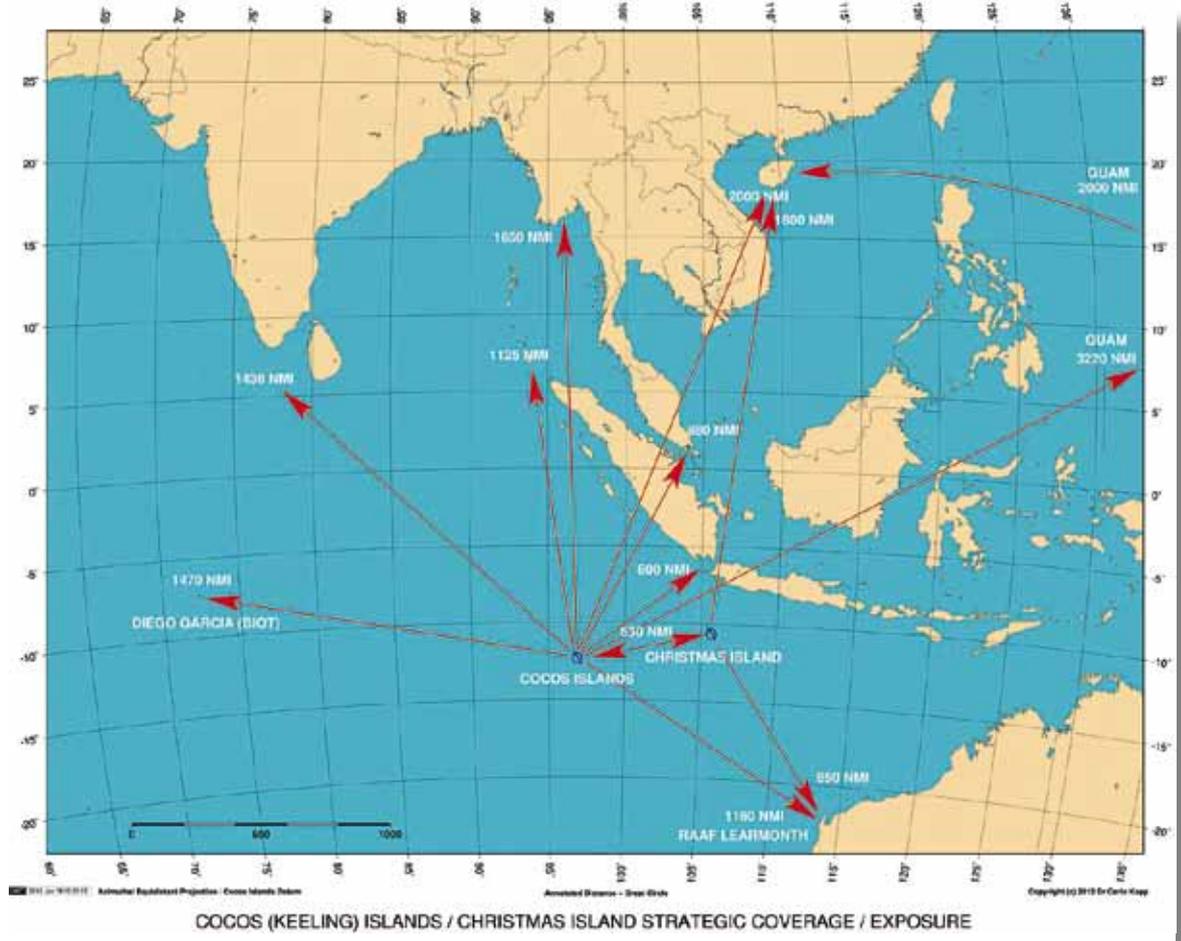


Strategic potential of the Cocos Islands and Christmas Island

Dr Carlo Kopp



The ongoing drift in the global balance of economic and military power toward Asia has brought important policy changes in the United States, with the recent Defense Strategic Guidance document putting the Asia-Pacific region and the associated air-sea battle strategy concept at the top of the long term strategic agenda for Australia's closest ally. The concurrent Australian Defence Force Posture Review (ADFPR) interim report was released in January, 2012, and the final report is expected this March.

The Indian Ocean is now the principal sea route for much of Asia's maritime traffic, carrying energy products from the Middle East and raw materials from Africa into Asia, along with much of Asia's industrial output to the world. 'Real estate' to base naval and air assets along the Indian Ocean is at a premium, to the extent that China has made extensive port construction investments in Pakistan and Burma (Myanmar), and airfield investments in the latter. In the context of this global and regional strategic game of position, Australia's two Indian Ocean offshore territories, the Cocos (Keeling) Islands and Christmas Island, are both valuable strategic assets. Both island territories are identified as such in the ADFPR interim report, but only a modest airfield runway upgrade for the

Cocos (Keeling) Islands is recommended, to support P-8 Poseidon maritime aircraft, thus exploiting only a small fraction of the actual strategic potential of either location. Discovered in 1609, the Cocos Islands were initially a privately owned asset, granted to the Clunies-Ross family in perpetuity by Britain in 1886, with jurisdiction transferred to Australia in 1955, and the Clunies-Ross family losing control of the islands by the late 1970s. The economy, since initial colonisation, has been based on palm tree plantations, but more recently eco-tourism, especially for divers. The Cocos Islands are geologically a horseshoe shaped coral atoll situated on top of a submerged seamount, itself part of a submerged mountain



Image of the Cocos Islands taken in 2009. The best anchorage is off Direction Island at the NE rim of the atoll, with excellent deep water access for large logistical vessels. The central lagoon is too shallow for military use, and environmentally fragile.

range. The central lagoon is very shallow, and unusable for warships without deep dredging. Like other similar atolls, such as Diego Garcia in the British Indian Ocean Territories, average elevation above sea level is very low, and usable surface area both limited and broken into multiple islands and islets. The largest two islands, both inhabited, are the West Island or Brown's West Island, and Home Island in the north-east of the atoll. The total land area of the atoll is only 14 square kilometres, mostly covered with a former commercial palm tree plantation.

Unlike the Cocos Islands, Christmas Island is a substantial volcanic island with a total land area of 135 square kilometres, of which much is elevated 200 to 300 metres above sea level, with steep cliffs along much of the coastline. Geologically, the island is a dead volcano covered by substantial deposits of limestone formed from dead coral, with exposed volcanic rock such as basalt in many areas. Much of the island is covered with rainforest, and the long term geographical isolation has led to the evolution of a wide range of unique species of plant and wildlife, including a number of endangered species. In geological terms Christmas Island is similar to Guam, but about one quarter of the size of the latter.

THE STRATEGIC DIMENSION

Australia has made little use of the strategic position of either Indian Ocean offshore territory since it gained control of them a half century ago. Cocos Island has been used on a regular basis as a Forward Operating Base (FOB) for refuelling P-3 Orion Long Range Maritime Patrol (LRMP) aircraft, especially during the late Cold War period when Soviet fleet movements needed to be closely monitored.

The great circle distances (Refer map) range between 600 nautical miles and 1,500 nautical miles, which is well within the capabilities of LRMP aircraft, tanker supported tactical fighters, and naval surface and subsurface assets. Attempting to cover the same geographical footprint from the Pilbara or Kimberley mostly doubles the required distances, which doubles transit times, doubles fuel burn, and mostly halves achievable sortie rates.

This is true for aircraft, but is an even greater problem for naval assets, be they surface fleet or submarines, as their transit speeds are less than 10 per cent of aircraft. Fuel aside, replenishment of expended munitions is a major issue, especially for the Navy. While the Navy has the option of underway replenishment from logistical ships, these must be escorted in and out of contested

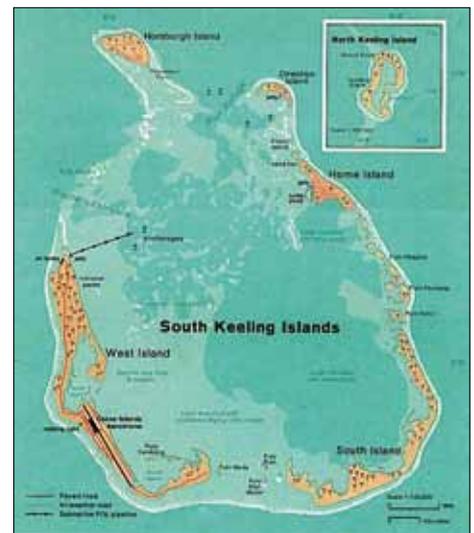
waters, and protected during replenishment. This is not feasible if within the reach of hostile land based strike aircraft, without unusually heavy commitment of protective land based Combat Air Patrols and tankers.

A site such as the Cocos Islands represents a valuable asset under such conditions, as it can be used to replenish submarines and surface warships with munitions and fuel - and if needed, crew. It also dramatically reduces the demand for tanker aircraft, when tactical fighters need to be deployed. The old adage about 'unsinkable aircraft carriers' applies, with the added capability for high volume logistical resupply.

If Australia intends to protect its outer Western maritime approaches, and perform both maritime denial and sea control operations in the Indian Ocean, then the Cocos Islands are ideally located. Moreover, the location offers the potential for air strikes into South East Asia, Burma, and the South China Sea, with sufficient tanker support. While the latter may appear "valueless" in the current peacetime regional environment, any major shifts in the political and military alignment of regional nations away from the US Alliance could change that literally overnight.

Therefore, the safest strategy for Australia is to properly develop the military potential of the Cocos Islands, as a naval replenishment site, and an air force 'Strategic FOB' along the lines of the British SEAC effort in 1944 - 1945. It would demonstrate that Australia has the intent to defend its interests and sovereign territories in the Indian Ocean. Christmas Island could play a similar role, although it is within 260 nautical miles of Jakarta, and thus highly exposed in any military situation where Indonesia is occupied by another power, or an adversary in its own right. Contemporary tactical ballistic missiles, ground launched cruise missiles and even the smallest tactical fighters can easily reach Christmas Island from any number of sites in Java. The reciprocal dimension of such proximity is that Christmas Island would easily permit high tempo air operations into Indonesia's heartland, a reality which will not be lost upon the TNI leadership in Jakarta. Any significant development of the military potential of Christmas Island would require some very adept diplomacy, and possibly the offer of training facilities and weapons range access on the island for the TNI-AU. If Indonesia becomes embroiled in a regional conflict to its north, a major basing facility on Christmas Island for ADF and US Air Force assets could be invaluable - the critical political dimension is whether Indonesia wishes to remain aligned with the US and Australia in the long term.

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Central Intelligence Agency map of the Cocos (Keeling) Islands.



Central Intelligence Agency map of Christmas Island.



B-52 Stratofortress heavy bombers queuing up for takeoff at Andersen AFB, Guam, during Operation Linebacker II in 1972.



A US Navy SSN entering Apra Harbor, Guam.



Diego Garcia in the BIOT, the airfield and wharf is shown under construction.



USS Saratoga berthed at Diego Garcia.



SSGN USS Florida berthed at Diego Garcia.

These considerations apply to Australian strategic needs in the context of defending Australia's immediate interests in the region, during a period of increased strategic competition across the region. They take on an additional dimension, if we consider the strategic needs of our principal ally, the United States.

The US had a robust basing network across the Pacific during the Cold War, including multiple bases in Japan, South Korea, the Philippines, the Marianas and Hawaii, with leased access to Britain's Diego Garcia in the Indian Ocean. Two decades after the Cold War, the Philippines bases are gone, and the North Asian bases are arguably indefensible against Chinese air assets, cruise missiles and ballistic missiles. While Diego Garcia and Guam have become central basing 'hubs', the remaining bases are problematic due to their locations. A crisis in South East Asia or the eastern Indian Ocean would present major challenges, especially for tactical air and tanker aircraft basing. This would be true of a conflict, as much as a major natural disaster.

A well developed air and naval basing infrastructure on the Cocos Islands, and Christmas Island, would thus become a valuable capability which Australia could offer the use of in a major contingency, as these sites would be a genuine 'gap filler' between the major bases in Guam and Diego Garcia.

BASING DEVELOPMENT OF THE COCOS (KEELING) ISLANDS

As the Cocos Islands are very similar in most key respects to Diego Garcia, the islands could be developed in a similar fashion to Diego Garcia, using identical or similar construction techniques, albeit on a smaller scale. The Diego Garcia base is a logistical Main Operating Base (MOB) hosting prepositioning ships, POL (Petroleum Oil Lubricant) storage, and an airfield which has been used for heavy bomber strike operations since 1991, but especially during the initial air campaign against the Taliban and Al Qaeda in 2001.

The principal limitations of the Cocos Islands when compared to Diego Garcia are threefold. The first two are that their land area is only one half of Diego Garcia, imposing practical limits on the scale of any installation, while the central lagoon is unusable. The third limitation is that the Cocos Islands are within 600 nautical miles of Sumatra and Java, and thus within easy reach of large tactical fighters, or air/sea launched cruise missiles, necessitating significant base hardening and concrete shelters if the base is to be viable for use in wartime. An unhardened base would be a liability more than an asset in a modern war, given the global proliferation of smart munitions. Resupply under air attack could also present problems – daily aviation fuel burn alone for a larger deployment would be of the order of hundreds of tonnes or greater.

Diego Garcia presents a good case study for any future development of the Cocos Islands for ADF and potential United States basing in a contingency, with the caveat that the Cocos Islands are not suitable as a logistical MOB.

While the existing Cocos Islands runway is adequate for the P-3C Orion, it is borderline for fighter operations due to length limitations, and lacks the surface strength for sustained high tempo operations by heavy aircraft, be they civilian transports, heavy military airlifters, or tankers. An airfield capable of sustained high tempo operations by the full spectrum of military aircraft at high gross weights dictates the use of a US Air Force AFH-32-1084 'heavy load' compliant MOB arrangement, which typically involves parallel 11,000+ ft x 200 ft runways.

Survivability in combat dictates dual runways, even if one is only used as a taxiway operationally. The latter, given the need for ~700 ft separation between parallel runways, makes redevelopment of the existing airfield infeasible unless the southern part of West Island is enlarged by landfill into the main lagoon, North Lagoon and South Lagoon.

The northern part of West Island, currently a defunct



Concept diagram for Cocos Islands redevelopment. This and similar basing arrangements are viable for high tempo combat operations, while providing peacetime eco-tourism potential. Environmental impact is minimised by siting the airfield on the unused coconut plantation, and placing the wharf outside the central lagoon (Author).

palm plantation, would be viable, and requires only partial landfill in the Northern Lagoon to provide full runway lengths (refer chart). This would permit use of the legacy airfield as a redundant fighter runway, or storage area. There is sufficient area available for up to 44 Hardened Aircraft Shelters for fighters. Hardened storage for aviation fuel and munition warstocks, and hardened personnel accommodation, would be required, as the Diego Garcia model of moored prepositioning and other logistical ships presents a major vulnerability in wartime. Hardening is essential tactically, and to survive seasonal cyclones in situ.

A naval replenishment facility with a MIL-HDBK-1025/UFC compliant pier plumbed for POL, and capable of Roll-On Roll-Off transfers of vehicles and materiel, modelled on Diego Garcia although much smaller, is also feasible at Port Refuge, located at the northern tip of Direction Island, where the seamount falls off rapidly, affording deep anchorage and covert submarine access. Covered "submarine sheds" would be preferable to permit covert replenishment. A "ring road" causeway on short pylons would be required to permit road access from the Direction Island wharf to West Island, providing also hardened protection for electrical and optical fibre cables, and POL and water pipelines to a desalination plant.

Given that the primary purpose of a naval base on the Cocos Islands would be replenishment of warships and submarines, rather than high volume logistical prepositioning of materiel, demands would be much less challenging than at Diego Garcia. Any limited coral dredging near Port Refuge would need to be performed very carefully given the potential for wider environmental damage to the fragile coral ecosystem in the lagoon, if performed poorly.

The latter is not only intrinsically important, given the value of the islands' fragile habitat, but also given the peacetime potential of the islands as an eco-tourism destination. A port capable of berthing cruise ships, and an airfield compatible with long range airliners, provide a critical enabler for eco-tourism, offsetting some infrastructure costs over the longer term.

BASING DEVELOPMENT OF CHRISTMAS ISLAND

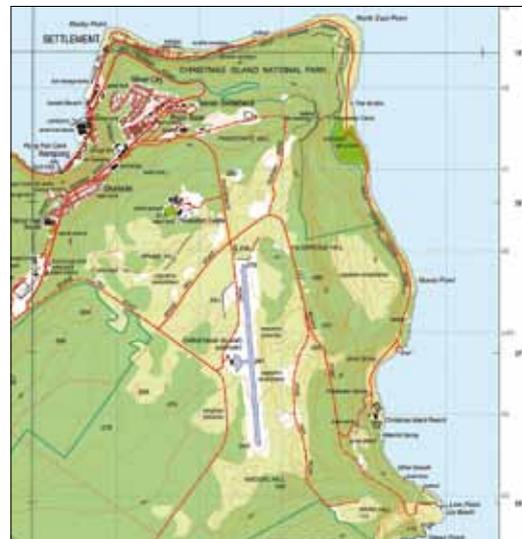
Christmas Island, given its "Guam-like" geology, presents few technical problems in development as a major airbase location. The abundance of dense and tough volcanic rock on the island permits the construction of a well hardened or superhardened airbase facility with no difficulty.



Flying Fish Cove at Christmas Island, with a visiting RAN FFG-7 (© Commonwealth of Australia 2011).



Norris Point container facility at Christmas Island (© Commonwealth of Australia 2011).



Redevelopment of the existing YPKM airport site into a dual 11,000 ft PCN100 runway system for civil and military use does not present unusual challenges given local terrain.

The existing airfield site could be readily expanded in the northern direction into a parallel 11,000 ft x 200 ft runway arrangement, without any significant environmental damage. The result would be similar to Andersen AFB on Guam.

A naval replenishment facility presents greater challenges, as the island has no large natural harbour. The existing Flying Fish Cove facilities built for phosphate loading could be expanded and redeveloped, but the site cannot become another Apra Harbor, and severe problems arise seasonally with high sea states. An alternate container loading facility exists at Norris Point on the eastern tip of the island, but it is also not a protected harbour. Without major development, Christmas Island would be viable for some naval resupply and replenishment activities, under favourable weather conditions, but is not viable as a naval FOB.

The development of a major airfield compatible with 747-400 and A380 airliners would be a critical enabler for the local tourist industry,

offsetting infrastructure costs over the longer term. No differently to the Cocos Islands, the fragile environment would require very careful management, although the best location for an airfield is already in use as such. (<http://www.christmasislandwildlife.com/>).

It is worth observing that Christmas Island was the intended location for the construction of a major spaceport, with a launch facility at the island's South Point, to be operated by Asia Pacific Space Centre (ASPC) Pty Ltd. The proposal did not eventuate, it appears due to undercapitalisation. The location is suitable for launches into both equatorial and polar orbits.

In conclusion, the British 1940s investment in the Cocos Islands is a reflection upon the excellent geographical location, for any operations intended to cover the chokepoints of the Malacca and Sunda Straits, and the major sea lanes skirting Southern India.





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