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US destroyers test China's resolve by passing through narrow Taiwan Strait

Jamie Seidel, News Corp Australia Network
July 8, 2018 10:06pm

CHINA regards the narrow Taiwan Strait to be its own. International conventions — to which it is a signatory — say otherwise. Now the US has pushed two destroyers through the channel in a move bound to inflame tensions with Beijing. Communist China insists the island is a '*wayward province'*. The Taiwanese are equally adamant that they are the last outpost of China's valid democratic government. In fact, the island was a Japanese protectorate before World War II. The US guided missile destroyers USS Mustin and Benfold undertook the operation Saturday, according to anonymous defence officials speaking to media. Taiwan's Ministry of National Defense confirmed the destroyers had entered the strait from the south, the first such transit for a year. Pacific Fleet spokesman Capt. Charlie Brown called the passage of the ships "*a routine transit*."

The Arleigh Burke-class guided-missile destroyer **USS *Benfold* (DDG 65). Picture: US Navy**

"*US Navy ships transit between the South China Sea and East China Sea via the Taiwan Strait, and have done so for many years*," he said. China has been boosting its own presence in the region, and in January sailed its own aircraft carrier through the narrow waterway for the first time.

The two US warships sailed through the strait while Secretary of State Mike Pompeo was in Pyongyang meeting senior North Korean leaders. Both destroyers are based in Japan. The **USS *Mustin*** is part of the USS Ronald Reagan aircraft carrier strike group which has been patrolling in the contested South China Sea in recent weeks.

China's aircraft carrier ***Liaoning*** caused alarm when her battle group passed through the Taiwan Strait earlier this year. **Picture: Chinese State Media**

The **USS *Ronald Reagan*** did not take part in the manoeuvre. The last time a US carrier did so was in 2007. US Defence Secretary Jim Mattis visited Beijing last week for the first time. It was the first visit by a defence chief in four years. He accused China of breaking a vow by President Xi not to "*militarise*" its controversial artificial islands. Instead, they've been turned into heavily defended, hardened fortresses. China has also been ramping up international diplomatic pressure over its claims on Taiwan, forcing international airlines to refer to it as part of China. Beijing has also insisted the US must not increase defence ties or deployments to the island, occupied by the remnants of China's Republican government in 1949 after the civil war which saw the Communist seize the mainland. In a recent Chinese state-run media editorial, deputy director of Institute of Taiwan Studies of the Chinese Academy of Social Sciences Wang Shushen said: "*If the US and Taiwan insist on playing with fire, let them burn their hands*." Taiwan's President Tsai Ing-wen has called for international assistance to resist China's expansionist behaviour. "*This is not just Taiwan's challenge, it is a challenge for the region and the world as a whole, because today it's Taiwan, but tomorrow it may be any other country that will have to face the expansion of China's*

influence," Tsai told AFP. "*We need to work together to reaffirm our values of democracy and freedom in order to constrain China and also minimise the expansion of their hegemonic influence*." **Source: https://www.themercury.com.au**

Trump, US Navy Say '*Zero'* Harassment of US Ships by Iran, Twitter Reacts

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01:23 09.07.2018
US President Donald Trump tweeted US Navy statistics reporting '*zero'* harassment of US ships by the Iranian Navy in 2018. According to a statement made by the US Navy on July 6, there have been zero incidents of harassment of US ships by the Iranian Navy in the Persian Gulf in 2018. This is presented as a positive dynamic when compared to previous years, particularly 2016, with 36 such occurrences, or about three incidents per month. Iranian Harassment of U.S. Warships:
2015: 22
2016: 36
2017: 14
2018: 0
During his 2016 presidential campaign, Trump pledged to take a hard stance on Iranian Navy. "*With Iran, when they circle our beautiful destroyers with their little boats, and they make gestures at our people, that they shouldn't be allowed to make, they will be shot out of the water*," he said. July 2017 marked the first US-Iranian incident on water that has occurred during the Trump administration, with a US ship firing a warning shot over an Iranian boat that reportedly approached within 150 years of the US vessel. In March, the US Navy publicly acknowledged the change in pattern of Iranian behavior. "*It seems like they've absolutely made a conscious decision to give us more space*," Navy Cmdr. William Urban, spokesman for US Naval Forces Central Command, said according to the Daily Caller. "*That is definitely a change in their behavior*." However, the positive dynamic is now in jeopardy, as Tehran has threatened to close the Strait of Hormuz and cut off oil trade through the Persian gulf entirely, in the event that the US attempts to disrupt Iranian oil exports.

Source: https://sputniknews.com

INS *Tarangini* departs for tall ship race

Special Correspondent
Kochi, July 07, 2018 23:25 IST
Updated: July 07, 2018 23:25 IS

INS *Tarangini*, a sail training ship of the Indian Navy based at the Southern Naval Command in Kochi, has departed Amsterdam in the Netherlands to take part in a '*tall ship race'* beginning July 10. The only Indian sail training vessel to have taken part in four tall ship races earlier, this time Tarangini will race alongside nearly 50 other tall ships, traditionally-rigged sailing vessels, from Sutherland in the United Kingdom to Esbjerg in Denmark in the first leg ending on July 18. The ship will then travel to Stavanger in Norway for the second leg of the race ending at Harlingen in the Netherlands between July 26 and August 3. Tarangini is the only commissioned Indian naval vessel to have circumnavigated the globe. The ship is on its fourth Lokayan lasting seven months – the earlier three in 2005, 2007 and 2015 – with the theme of '**Sailing through different oceans and uniting nations'**. It is a training cruise with some 150 cadets and over 50 naval personnel including nine officers. Last month, the ship took part in a tall ship regatta at Bordeaux in France. **Source: https://www.thehindu.com**

The Australian Navy Landing Helicopter Dock (LHD) **HMAS *Canberra*** seen leaving Brisbane with the Tug ***Clontarf*** in attendance.
Photo : Ken Fletcher ©

China's 'supergun' to be fitted to new destroyers

BEIJING is boasting it has launched two new ships that will soon carry a revolutionary new weapon into battle — an advanced cannon that swaps explosives for powerful magnets.

BEIJING's determination to 'leapfrog' the United States in defence technology has taken another jump forward, with the launch of two new ships said to be capable of mounting a deadly new weapon system. Earlier this year China surprised the world when it appeared to confirm speculation that an unusual prototype gun seen aboard a military transport ship was a deadly new electromagnetic rail gun. The state-run Global Times has tied this revelation to the launch of two new large warships earlier this week. Two Type 055 destroyers hit the water for the first time in Dalian, in the province of Liaoning, on Tuesday. The Global Times quoted state-approved military commentator Song Zhongping as saying the new ships will be armed with the new weapons. "*The Type 055 is the best fit for China's future electromagnetic gun, for the all-electric warship could meet the weapon's huge power supply demand*," he reportedly said. If true, it represents a major stride forward in Beijing's rapid expansion and modernisation of its navy.

A close-up of the apparent railgun aboard the Chinese landing ship ***Haiyangshan***.

Pictures began circulating on social media of an unusually shaped cannon positioned precariously at the very front of a particularly unsuited ship early this year. The vessel was later identified as the Chinese Type 072 III landing ship ***Haiyangshan*** — designed to carry men and tanks, not enormous guns. Beijing's official mouthpiece The People's Daily Online then published an article reporting speculation the unusually large single-barrelled weapon was an electromagnetic rail gun. Military analysts say the modular nature of the landing ship, and its enormous cargo carrying capacity, likely made it ideal to test the enormous new gun and its heavy accompanying equipment — such as generators and battery packs. Instead of explosives, it uses powerful magnets to sling warheads down its barrel and into the air. It is calculated this will enable larger warheads to be fired much faster — and further — than traditional cannons. Once fully operational, such guns could sink ships, attack land targets — and even destroy aircraft and missiles in flight — at ranges

and accuracy normally expected from missiles. "*Though the US has been openly developing electromagnetic guns for years, it doesn't mean that China is far behind in this field, as the latter [usually] keeps quiet about its progress due to secrecy concerns*," military commentator Chen Shuoren told the Science and Technology Daily component of the People's Daily in February.

The two new Type 055 destroyers (upper two) China says will be armed with electromagnetic rail guns.

The two new 13,000 ton destroyers will undergo more work and testing before likely being accepted into PLAN service late next year. The 180m long ships are designed to accompany and protect China's new fleet of aircraft carriers. Beijing declared its first carrier — ***Liaoning*** — combat capable earlier this year. Its second carrier, the first it has built itself, was launched in May. The Type 055 destroyers carry 112 vertical launch modules capable of housing a variety of interceptor and surface-attack missiles. It also has an extensive array of radars and sonars to detect air and submarine threats. Its hangar can accommodate two helicopters. It is unlikely they will have the new railguns at that point. Pictures of the ships at the Dalian dockyards show them fitted with the more conventional explosive-powered H/PJ-30 130mm dual-purpose cannon. But it is possible the vessels have been designed for these guns — and their ammunition stores — to be easily replaced by the power-hungry railguns and their new projectiles. China's state-run news service Global Times says the People's Liberation Army Navy plans to commission up to 10 of the big destroyers. The first of the class was launched in 2017. The latest launch brings the total number in the water so far to four. "*Launching four 10,000-ton class missile destroyers in about one year shows China's remarkable shipbuilding capability, and compared to other major naval powers, including the US, China's speed is the fastest,*" the Global Times quotes a retired naval officer as saying.

Source: News.com.au

The construction of the Russian destroyer "*Lider*" and the aircraft carrier may be delayed until 2035

The Minpromtorg also added that they are considering three scenarios for the development of the economy and the shipbuilding industry: conservative, innovative and target

MOSCOW, July 3. The construction of prospective surface ships of the far sea zone with a lack of financing may be postponed until 2035. This is stated in the Draft Strategy for the Development of the Shipbuilding Industry for the period up to 2035 by the Ministry of Industry and Trade of the Russian Federation. "*With regard to military shipbuilding, it is expected to postpone the commencement of R & D [research and development work] and serial purchases for a number of prospective ships and vessels for the period after 2025 due to the substantial sequestration of budgetary allocations for defense, as well as the complete refusal to purchase a number of large surface ships (a prospective destroyer, a marine aircraft carrier complex, the IAC) until 2035*, "the document says. Based on the degree of favorable macroeconomic and industry indicators, the Ministry of Industry and Trade considers three scenarios for the development of the economy in general and the shipbuilding industry in particular: conservative, innovative and targeted. "*In the conservative scenario, the slowdown in economic growth has a negative impact on the development of the shipbuilding industry, because of the declining competitiveness of the economy, the persistence of tight fiscal policy, the transition to monetary policy with a positive real key interest rate of 2-3%, and a decline in oil prices to $ 40 per barrel in constant dollars in 2017, GDP growth will be 0.2% in 2018-2020, 1.8% in 2021-2025, followed by a slowdown to 1.0% in 2031-2035*, "the draft document explains. According to the innovative scenario, in the military shipbuilding sector, it is expected that in 2020-2022 construction of the main series of ships laid before 2018 will be completed, as well as "*intensification of R & D and the start of procurement of head and serial advanced models, including*

large surface ships of the far sea and ocean zone actions after 2020 ". Oil prices in this scenario will remain at around $ 60 per barrel. The target (forced) scenario, in addition, involves an intensive increase in the supply of ships and ships in the framework of military-technical cooperation. The rise in oil prices under such a scenario will persist to about $ 75 per barrel in constant dollars in 2017. Earlier, Deputy Commander-in-Chief of the Russian Navy for armament Viktor Bursuk said that work on the construction of a prospective destroyer ***Lider*** (Leader) for the Navy could begin in 2020. The project of the destroyer under the code "*Leader*" is being developed at the Northern Design Bureau in St. Petersburg. Igor Ponomarev, vice-president of the United Shipbuilding Corporation (USC) for military shipbuilding, clarified earlier, the Russian Defense Ministry has already agreed on the outline design of the ship. It was reported that the displacement of the future destroyer could range from 10 to 15 thousand tons. According to Bursuk, "*Leader*" will receive a nuclear power plant. In turn, the head of the United Shipbuilding Corporation, Alexei Rakhmanov, reported that Russian shipbuilders are designing a prospective aircraft carrier in an initiative, but there is still no contract for it. Earlier, the TASS source reported that the USC before the end of 2018 will submit for consideration to the Ministry of Defense of the Russian Federation a few finalized drafts of a new domestic aircraft carrier. In case of a positive decision on one of the options, development work on the ship can begin in 2019. Currently, the Russian Navy has a single non-nuclear medium-sized aircraft carrier, ***Admiral Kuznetsov*** (according to the Russian classification, a heavy aircraft carrying cruiser). As previously stated in the Navy, the Russian fleet expects to receive a prospective aircraft carrier with an atomic power plant by the end of 2030, the displacement of the new aircraft carrier should not be less than 70 thousand tons. Krylov State Research Center previously developed and presented to the general public an aircraft carrier design for foreign customers, which was also offered for the domestic fleet. Project 23000 was named "*Storm*". The sketch assumes that the ship will have a displacement of 80-90 thousand tons, it will be equipped with a combined power plant (both an atomic reactor and a gas turbine engine) and the air group of the ship will number up to 60 aircraft. **Source: TASS**

HMAS *Collins* prepares for trials after completing maintenance

HMAS *Collins* Berthed at ASC North, Osborne, South Australia. **Photo: Royal Australian Navy**

The first of the Royal Australian Navy's Collins-class submarines has returned to service after receiving upgrades during maintenance at ASC's shipyard in Osborne, South Australia. ASC completed planned maintenance onboard the **HMAS *Collins*** as part of a full-cycle docking and enterprise restructure of submarine maintenance. For her crew, reassuming material control (MATCON) and responsibility for the platform represented an important milestone in her return to service. **HMAS Collins**' marine engineering officer, Lieutenant James Ferrari said it was a significant undertaking. "*A Collins class submarine is an extremely complex platform made up of a multitude of interconnected and interdependent systems. "After a long period in dock, the task of ensuring that all of those systems function not only individually but also in concert presents significant challenges*." The transfer of MATCON between the RAN and ASC during different stages of the lifecycle of Collins class submarines is a key feature of the partnership between defense and *industry partners. Commanding officer **HMAS Collins**, Commander Christopher Ellis was thankful to both ASC and his crew. "Bringing a boat back into service after a prolonged maintenance period presents a myriad of challenges, which the crew have met with admirable enthusiasm and professionalism*," he said. "*As a result of commendable cooperation between my ship's company, the larger submarine community, and ASC contractors, I am confident we are on track to return to sea this year with a safe and very capable platform*," Commander Ellis said. Having now taken MATCON, the crew will oversee the final stages of her maintenance period to include harbour acceptance trials, while working towards readying her, and themselves to go to sea later this year. **Source: Naval Today**

The US Navy is testing a Coating That Could Let Submarines Glide More Easily through Water

The Navy is researching a new coating that could be used on submarines and other ships to help them glide more easily through the water, reducing fuel costs. The substance, known scientifically as a super hydrophobic coating, repels water, reducing the drag created by a hull moving through the water. The Navy says it could save millions of dollars in ship fuel costs. The coating has millions of pockets of air trapped underneath, which essentially create an air film that causes water to slide off a surface. That results in lower friction and significantly reduces drag. "*As much as 60 percent of fuel can be used on drag, maybe higher depending on speed. We have the potential of cutting that significantly*," said Anish Tuteja, an

associate professor of materials science and engineering at the University of Michigan, whose research the Office of Naval Research is sponsoring. These repellent coatings aren't new. Tuteja's group has been doing this research for more than a decade, but it's hard to find a solution that's durable, especially when the environment is as harsh as the ocean.

The U.S. Navy ballistic missile submarine, **USS Tennessee** (SSBN 734). **Photo: MCS I James Kimber USN**

"*For this particular application, you have to get the texture exactly right. If the pores are too big, the water can essentially go into the pores and then it gets in and the drag actually increases, and if the pores are too small it doesn't create enough drag, so it had to be in the right regime to create drag*," Tuteja said. Tuteja and his team analysed hundreds of chemical combinations before finding the right mix. The goal is to make the coating last for several years, Tuteja said, and it could be applied by a spray similar to how paints are currently applied to the hull of a ship. The coating has a rough white surface because it has to be textured to create the air pockets, Tuteja said. His team is also working on coatings that repel other liquids beside water, like oil, alcohol, and even peanut butter. Those coatings are being tested for a range of Pentagon uses such as for soldiers' uniforms and protective eye wear. While there are various commercial applications for these coatings like preventing stains from liquids such as soda, juice, and alcohol on carpets and clothing, coatings for Navy application require "*a lot more proving out*," Tuteja said. It would be at least a few years out before they go onto ships.

Source: The Day (New London, Conn).

Strait of Hormuz: The World's Most Important Oil Artery

July 5, 2018 by Reuters

File Photo: U.S. Navy Photo

REUTERS

LONDON, July 5 (Reuters) –

With a third of the world's sea-borne oil passing through it every day, the Strait of Hormuz is a strategic artery linking Middle East crude producers to key markets in Asia Pacific, Europe, North America and beyond. This week, an Iranian Revolutionary Guards commander threatened that Tehran will block oil shipments through the waterway in response to U.S. calls to ban all Iranian oil exports. The Strait has been at the heart of regional tensions for decades and this is not first time that Tehran has made such threats.

What is it?

* It is a waterway separating Iran and Oman, connecting the Gulf to the Gulf of Oman and the Arabian Sea.
* It is 21 miles wide at its narrowest point, but the shipping lane is only two miles wide in either direction.

Why it matters?

* The U.S. Energy Information Administration estimates a record 18.5 million barrels per day of sea-borne oil passed through it in 2016, a 9 percent increase on flows in 2015 which accounted for 30 pct of all sea-borne traded crude oil and other liquids during the year.
* Sea-borne crude and condensate flows transiting the Strait are estimated at around 17.2 million bpd in 2017 and around 17.4 million bpd in the first half of 2018, according to oil analytics firm Vortexa.
* Most of the crude exported from Saudi Arabia, Iran, the United Arab Emirates, Kuwait and Iraq passes through it. It is also the route for nearly all the liquefied natural gas (LNG) from lead exporter Qatar.
* Throughout the Iran-Iraq war (1980-1988) the two sides sought to disrupt each other's oil exports in what was known as the Tanker War.
* The U.S. Fifth Fleet, based in Bahrain, is tasked with protecting the commercial ships in the area.
* Energy consultants Petromatrix who track U.S. aircraft carriers in the region say there are currently no carriers in the Arabian Gulf. They add the carrier that could have made the short trip to the Gulf from the eastern Mediterranean, turned around to sail back to the Atlantic.

* "Under the Bush administration there was always one to two carriers in the Arab Gulf, under the Obama administration there were some short times when the Arabian Gulf was left with no carriers but that was gestures made while the U.S. was negotiating with Iran," the said on July 5

Pipeline alternatives

* The UAE and Saudi Arabia have sought to find alternatives to bypass the strait. The following EIA table shows those pipeline projects.

Incidents in the Strait

* In July 1988 the U.S. warship ***Vincennes*** shot down an Iranian airliner, killing all 290 on-board, in what Washington said was an accident after crew mistook the plane for a fighter. Tehran called it a deliberate attack. The U.S. said the ***Vincennes*** was in the area to protect neutral vessels against Iranian navy attacks.
* In early 2008 the United States said Iranian boats had threatened its warships after they approached three U.S. naval ships in the Strait.
* In June 2008, Revolutionary Guards commander-in-chief, Mohammad Ali Jafari, said Iran would impose controls on shipping in the Strait if it was attacked.
* In July 2010 a Japanese oil tanker called ***M Star*** was attacked in the Strait. A militant group called Abdullah Azzam Brigades, which is linked to al Qaeda, claimed responsibility.
* In January 2012, Iran threatened to block the Strait in retaliation for U.S. and European sanctions that targeted its oil revenues in an attempt to stop the nuclear program.
* In May 2015, Iranian ships fired shots at a Singapore-flagged tanker which it said damaged an Iranian oil platform, causing the vessel to flee, and seized a container ship in the Strait.
* On July 3, 2018, President Hassan Rouhani hinted Iran could disrupt oil flows through the Strait in response to U.S. calls to bring down Iran's oil exports to zero.
* The following day, a Revolutionary Guards commander spelled out that Iran would block all exports through the Strait if Iranian exports are stopped

Sources: Reuters/Energy Information Administration

U.S. Navy Ready to Protect Freedom of Navigation in Strait of Hormuz Amid Iran Threat

July 5, 2018 by Reuters

G-Valeriy / Shutterstock

REUTERS

By Bozorgmehr Sharafedin

LONDON, July 5 (Reuters) – The U.S. Navy stands ready to ensure free navigation and the flow of commerce, the U.S. military's Central Command said on Thursday, as Iran's Revolutionary Guards warned they would block oil shipments through the Strait of Hormuz if necessary. Iranian President Hassan Rouhani and some senior military commanders have threatened in recent days to disrupt oil shipments from the Gulf countries if Washington tries to cut Tehran's exports. Praising Rouhani's "*firm stance*" against the United States, the head of the Revolutionary Guards said on Thursday their forces were ready to block the strait which links the Gulf to the open sea. In May, U.S. President Donald Trump pulled out of a multinational deal under which sanctions on Iran were lifted in return for curbs to its nuclear program. Washington has since told countries they must stop buying Iranian oil from Nov. 4 or face financial measures. If Iran cannot sell its oil under U.S. pressure, then no other regional country will be allowed to either, said Mohammad Ali Jafari, who commands the Islamic Revolutionary Guard Corps, Iran's most powerful military force. "*We are hopeful that this plan expressed by our president will be implemented if needed … We will make the enemy understand that either all can use the Strait of Hormuz or no one,*" Jafari was quoted as saying by Tasnim news agency. The Strait of Hormuz is the most important oil transit channel in the world with about one-fifth of global oil consumption passing through each day. "*The U.S. and its partners provide, and promote security and stability in the region*," Central Command spokesman Navy Captain Bill Urban said in an email to Reuters. Asked what would be the U.S. Naval Forces' reaction if Iran blocks the strait, he said: "*Together, we stand ready to ensure the freedom of navigation and the free flow of commerce wherever international law allows*." The Guards' naval arm lacks a strong conventional fleet. However, it has many speed boats and portable anti-ship missile launchers, and can lay mines. A senior U.S. military leader said in 2012 the Guards have the ability to block the

Strait "*for a period of time*" but the United States would take action to reopen it in such an event. (Reporting by Bozorgmehr Sharafedin Editing by Matthew Mpoke Bigg and David Stamp) **Source:** http://gcaptain.com

GQM-163 SSST: A Tricky Coyote to Match Wits With Defenses

Oct 12, 2014 18:15 UTC by Defense Industry Daily staff

GQM-163A launch

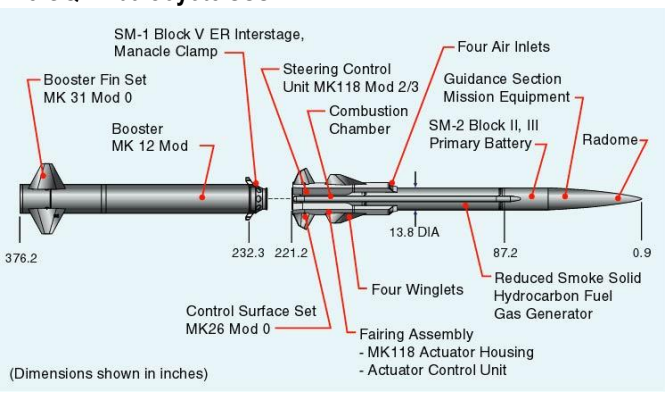
Order for USA & Japan.

Oct 10/14: FRP-8. A $27.7 million firm-fixed-price, fixed-price-incentive, cost-plus-fixed fee contract for 7 GQM-163A Coyote SSST base vehicles, including the associated hardware, kits and production support for the U.S. Navy (3 / $13.7M / 50%) and the government of Japan (4 / $14.0M / 50%). All funds are committed immediately. Work will be performed in Chandler, AZ (71%); Camden, AK (24%); Vergennes, VT (3%); and Hollister, CA (2%); and is expected to be complete in June 2017. This contract was not competitively procured pursuant to FAR 6.302-1 (N00019-15-C-0009).

Shot across the bow

The rocket-boosted, ramjet-powered GQM-163A was developed to simulate supersonic cruise missiles like the SS-N-22 Sunburn, Kh-31 (aka. AS-17 Krypton, which may have an anti-air AWACS-killer version), the Indo-Russian PJ-10 Brahmos, etc., which are proliferating throughout the world. Their speed and evasive maneuvers compress the amount of time a defense system has to deal with them to under a minute. A training target that can simulate their performance is critical to both proper preparedness and pursuant performance. Despite this growing need, the Supersonic Sea Skimming Target (SSST) program moved very slowly in the 1990s, with false starts that included a Boeing-Strela Kh-31 Krypton variant before the decision was made to develop a new SSST. Orbital Sciences won the contract in June 2000, but the BQM-163 suffered a number of program delays before its final developmental test flight eventually took place in in April 2005. The program is now moving forward, slowly, and picking up international customers as well…

The GQM-163 Coyote SSST



Coyote cutaway

The Coyote target missile design integrates a 4-inlet, solid-fuel ducted-rocket ramjet propulsion system into a compact missile airframe 18 feet long and 14 inches in diameter. Rail-launched from Navy test and training ranges, the highly maneuverable Coyote achieves cruise speeds of over Mach 2.5, with a range of approximately 60

nautical miles at altitudes of less than 20 feet above the sea surface. Designation Systems writes: "*The GQM-163A is launched from the ground with the help of a Hercules MK 70 rocket booster (left over from obsolete RIM-67 Standard ER missiles). The MK 70 is externally identical to the older MK 12 booster of the original specification. The sustainer propulsion system consists of an Atlantic Research Corporation (now Aerojet) MARC-R-282 solid-fueled ducted rocket/ramjet engine, which can propel the Coyote to speeds of up to Mach 2.8 at sea level. In the terminal approach phase, the GQM-163A will fly at Mach 2.5 at 5 m (16 ft) altitude. To save costs, the missile's flight control avionics and its front end structure are taken from the [DID: Beech/Raytheon] AQM-37D target*." The Coyote can carry a payload, but its size and short range make it unsuitable as an actual anti-ship missile. Those same characteristics are just fine as a naval target. Orbital Sciences says that: "*Orbital's major subcontractors include Aerojet Corporation in Gainesville, Virginia and Sacramento, California, for the solid-fuel ducted-rocket motor, and CEi, Inc. in Sacramento, California, for the vehicle's avionics system*." The GQM-163A Coyote has entered operational service at the Naval Air Warfare Center (NAWC) in Point Mugu, CA, and is replacing the MQM-8 VANDAL that was based on the liquid-fuel ramjet-powered Talos missile. It has also been used by Australia, and ordered by France and Japan. **Source: https://www.defenseindustrydaily.com**

Hunting for the reason—the new frigates

4 Jul 2018|Mike Scrafton

The 2016 Defence White Paper stated that the nine new future frigates will be 'optimised for anti-submarine warfare'. According to the Turnbull government, they will be 'one of the world's most advanced anti-submarine warfare frigates'. It stands to reason, hopefully, that for $35 billion the government is addressing a serious submarine threat to Australia. There has been a significant increase in interest in submarine acquisition in Southeast Asia. Vietnam has purchased six Kilo-class submarines from Russia. Indonesia is adding three Korean-built submarines to its inventory of two upgraded Type 209 Cakra class. Two German-built submarines have been ordered to supplement Singapore's existing fleet of four. Thailand will buy three Chinese Yuan-class vessels, and Myanmar has indicated an interest in gaining a submarine capability. Malaysia has long-term plans to double its current submarine numbers to four by 2040. The white paper predicts that *'[w]ithin the broader Indo-Pacific region, in the next two decades, half of the world's submarines will be operating in the region' and* '[b]y 2020 China's submarine force is likely to grow to more than 70 submarines'. India currently operates 14 submarines. This is likely the real strategic issue. Sound practice in force structuring is not to rely on being able to guess the future intentions of neighbouring states—circumstances and politics change, and over time allies can become friends and vice versa—but to look at the possible forces that could be arrayed against national interests. Taking a narrow view and just focusing on the burgeoning interest in submarines in Australia's near region, it's easy to appreciate that a threat from submarines is not totally negligible. But given the additional factor of constrained resources, governments have to allocate a priority to confronting the submarine threat relative to other strategic challenges. In addition, within that constraint, a decision is required on how much anti-submarine warfare capability is enough. Does the regional threat warrant the very expensive 'world's most advanced anti-submarine warfare frigates'? This is a difficult question to answer from outside the Department of Defence's Russell offices. Anti-submarine warfare is a complex and evolving business. It's a highly classified cat-and-mouse game where submariners and surface antagonists are constantly trying out better measures and countermeasures. And the contest takes place in a hostile and unforgiving environment. Sonar technology is divided into two areas—the '*wet end*' and the '*dry end*'. The wet-end research is based on acoustics and oceanography. The effectiveness of sonar depends on understanding the unique physical, chemical and biological signature of the body of water in which the sensor is being operated. Aside from scientific expertise in geophysics and oceanography, underwater acoustics involves confronting a host of practical issues, including how to detect and distinguish the target signature amid noise from wind, waves, ship engines and strumming cables, and from sounds scattered from other distant objects. Increasingly sophisticated dry-end processing employs digital technology, statistical programs and now artificial intelligence to try to surmount these challenges. Standard signal-processing techniques such as beamforming, spectral analysis and statistical analysis determine the probability of achieving a target detection or identifying a false alarm. Developments in unmanned underwater vehicles for military applications, while still immature, promise to disrupt current operational and tactical approaches to undersea warfare. China, Russia and the US are all pursuing this technology. It takes decades to build up a national capability in the bodies of technical expertise that are essential to effectively operating submarines.

Submarines also require a well-trained professional service to operate them and maintenance arrangements. Apart from Singapore, no Southeast Asian nation is likely to be able to mount a potent submarine force for a long while. So, the government's decision to spend $35 billion over the coming decade to build the Hunter-class fleet raises a question. Is this level of capability commensurate with the regional threat? The P-A8 Poseidon, as the prime minister announced, '*has been designed by the US Navy to dominate in Anti-Submarine Warfare'*. The $50-billion future submarine project can, according to the white paper, also make '*a meaningful contribution to anti-submarine warfare operations in our region'*. On balance, the overall anti-submarine warfare capability provided by the Hunter class, the P-A8s, and the future submarine force seems disproportionate to the regional threat. On the other hand, all this capability could be intended for the South China Sea. However, optimising the anti-submarine capability to operate in the cold, deep waters off China as opposed to the warm, shallow waters of the Australian littoral would presumably be a far from cost-effective outcome for the Defence dollar. If that is the intent, then Australians have been misled. The overemphasis on interoperability with the US contained in almost all government equipment announcements might indicate that the real object of investment approaching $100 billion is to be ready for Australia to sail in tandem with the US into the South China Sea if a conflict breaks out. There may be a strategic justification for diverting investment into this capability and away from national infrastructure or the provision of health or education services. Rather than trying to placate the Australian public with reassuring words about borders and search and rescue, and endlessly reiterating meaningless simplistic slogans about security, the government should say if there is a tacit understanding in Canberra and/or an informal commitment to Washington to automatically side with the US in an East Asian conflict.

Author: Mike Scrafton *is a former senior Defence executive, former CEO of a state statutory body, and former chief of staff and ministerial adviser to the minister for defence. A version of this post was originally published on the Pearls and Irritations blog and has been republished with kind permission. Image courtesy of the Department of Defence.*

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The ***Windsurf*** arriving in Gibraltar **Photo : Francis Ferro ©**

Workhorsesof the sea

Skandi Acu**:** Good conditions in the Buzios Field / Bacia de Santos Brazil. **Photo : Capt Peter Franse (c)**