NAVY NEWS WEEK 38-1

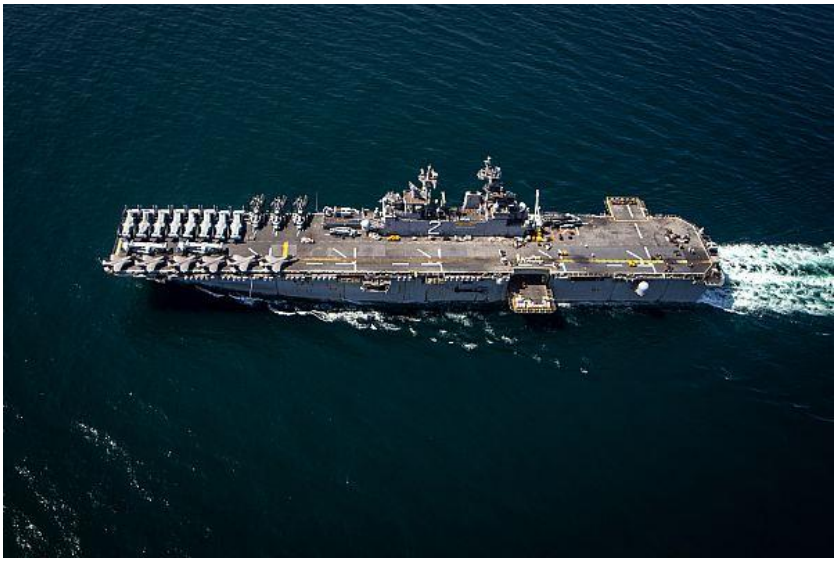
16 September 2018

German Navy corvette *Oldenburg* ready for UNIFIL mission

Photo: Deutsche Marine

The German Navy's corvette ***Oldenburg* (F263)** is to deploy to the United Nations Interim Force in Lebanon (UNIFIL). The ship is scheduled to leave its homeport Warnemünde with its Delta crew on September 10, 2018, according to the navy. The patrol of the coast of Lebanon comes twelve months after the previous deployment, Corvette Captain Thorsten Vögler said, adding that the crew underwent the necessary preparations and training before setting sail for Lebanon. ***Oldenburg*** belongs to the K130 Braunschweig class — Germany's newest class of ocean-going corvettes. Established in 1989, UNIFIL aimed to restore international peace and security and confirm the withdrawal of Israeli forces from southern Lebanon. UNIFIL, which has around 10,500 peacekeepers coming from 41 troop contributing countries, maintains an intensive level of operational and other activities amounting to approximately 13,500 activities per month, day and night, in the area of operations.

Source: Naval Today



GULF OF ADEN (Sept. 5 2018) The Wasp-class amphibious assault ship **USS *Essex* (LHD 2)** transits the Gulf of Aden during a vertical replenishment while on a scheduled deployment of the Essex Amphibious Ready Group (ARG) and 13th Marine Expeditionary Unit (MEU). The Essex ARG/13th MEU is a lethal, flexible, and persistent Navy-Marine Corps team deployed to the U.S. 5th Fleet area of operations in support of naval operations to ensure maritime stability and security in the Central Region, connecting the Mediterranean and the Pacific through the western Indian Ocean and three strategic choke points. (U.S. Navy photo by Mass Communication Specialist 3rd Class Matthew Freeman/Released)

Colombian Navy hosts Unitas LIX exercise

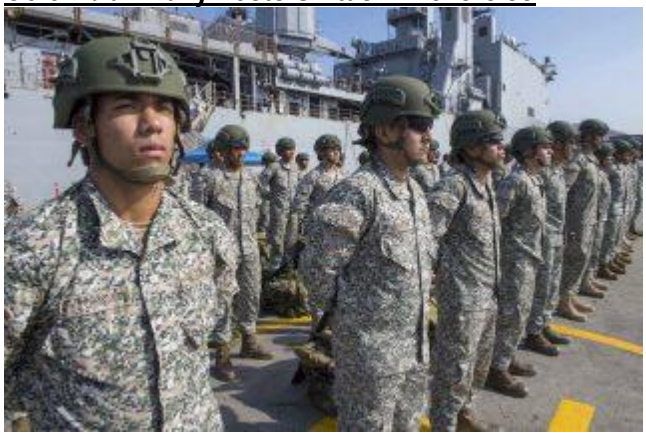


Photo: US Navy

Gathering in Cartagena, Colombian naval forces are taking the helm for **Unitas LIX**, a multinational maritime exercise taking place from August 31 – September 11. Colombia is hosting eleven navies participating in the exercise — the United States, Argentina, Brazil, Canada, Chile, Colombia, Ecuador, Mexico, Panama, Peru, and the United Kingdom. The country has been a participant in Unitas since 1960 and has hosted three times in **Unitas** history: 2005, 2013, and 2018. Colombian navy Rear Adm. Gabriel Alfonso Perez Garces is the overall commander for the exercise. "*This is an incredible opportunity for our navies to come together and operate as a team to enhance our abilities to work together in the future. Developing skills and building lasting friendships with our counterparts is critical when we need to respond to any future maritime threats*," Rear Adm. Sean Buck, commander, US Naval Forces Southern Command/US 4th Fleet, commented. The goal of **Unitas LIX** is to develop and test command and control of forces at sea. Specifically, there will be scenarios addressing electronic warfare, anti-air warfare and air defense, anti-surface warfare, maritime interdiction, and amphibious operations.

Source: Naval Today

Royal Navy confronts Argentine vessel *'snooping for oil'* near Falkland Islands

Dominic Nicholls, Defence correspondent
6 September 2018 • 3:32pm

HMS *Clyde* meets Falkland Island residents

An Argentine ship has been caught in Falklands waters *'snooping for oil'*, the Royal Navy has revealed. **HMS *Clyde*** was scrambled to see off a ship from the Argentine navy thought to be prodding military defences in seas off the Falkland Islands on September The Argentinian survey ship, **ARA *Puerto Deseado***, switched off her satellite tracker and sailed up to the edge of British territorial waters on Sunday afternoon. The Royal Navy patrol vessel stationed in the Falkland Islands, **HMS *Clyde***, reacted swiftly after the Argentinian vessel changed course and speed towards the 12-mile territorial limit. The stand-off ended when **ARA *Puerto Deseado***, bristling with equipment to investigate the depths of the ocean, retreated and turned on her tracker again. She returned to port the next day. Nick Childs of the International Institute for Strategic Studies says it was a fairly minor incident and part of the nature of maritime operations, especially when compared to the military probing immediately after the Falklands War. However, he said "*the maritime domain is increasingly contested globally and this incident shows how the Navy is increasingly being pulled in all sorts of directions at the same time with limited resources*". Former captain of frigate **HMS *St Albans***, Commander Tom Sharpe, suggested the Argentinian ship had been snooping for oil reserves. He thought the response from **HMS *Clyde*** had been timely, proportional and appropriate, and therefore had the desired effect. "*Not intercepting for fear of being seen to overreact or, worse still, because of insufficient resources - using 'not wishing to over-react' as an excuse - is unacceptable and a road we have trodden before in this part of the world*," he said. "*This type of operation is precisely what navies should do. Do we need a frigate or destroyer in the South Atlantic all the time? Not necessarily. This in no way should take anything from the excellent **HMS Clyde**, operating alone and unafraid around the clock in some of the most hostile waters on the planet*." A Ministry of Defence spokesman said: "*This was unusual activity rather than illegal or confrontational. We are comfortable with vessels working in that area, but it was the course and speed [of the Argentinian ship] towards the islands which was unusual*".

Source: https://www.telegraph.co.uk

US Equips Indian Navy With"*Live Video Feed*" To Track & Destroy Chinese Submarines

By EurAsian Times
September 6, 2018

The US and Indian Navy have joined hands to track Chinese submarines and other naval vessels operating in the region. As soon as the US detects a Chinese submarine or warship, the Indian Navy operating in the region will get intimated via the encrypted data shared by the US Navy. This will immensely help the Indian Navy to detect, track and destroy Chinese vessels in case of a conflict. An analysis by EurAsian Times.

The Indian Navy will also get the exact bearing and speed of the Chinese vessels and will also be able to receive a live video feed of the '*Chinese target'* as well, as per secondary research by EurAsian Times.

Combined Enterprise Regional Information Exchange System

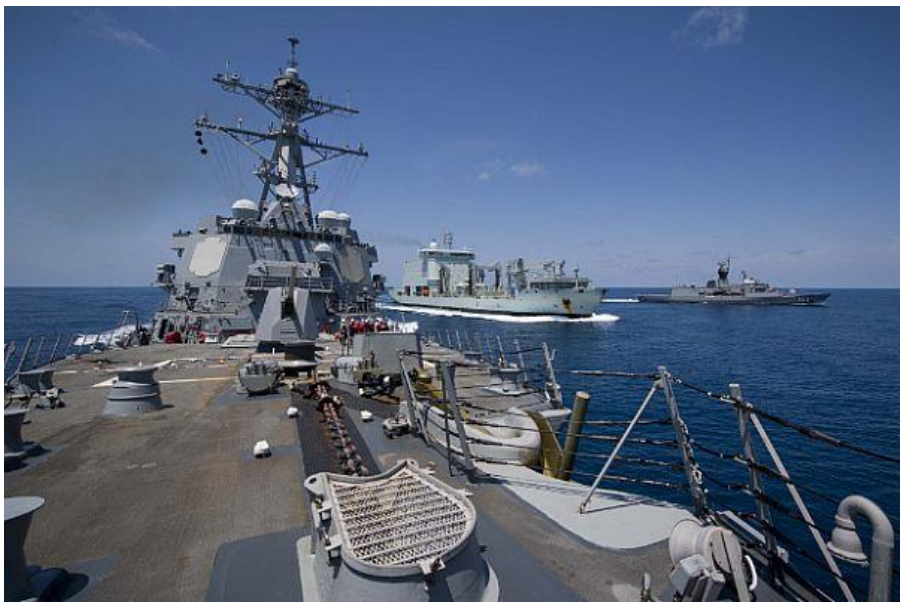
The receivers equipped in Indian Navy vessels will be a part of US' Combined Enterprise Regional Information Exchange System (CENTRIXS) a system defined by the US Navy as a "*collection of classified coalition networks*" that aids combatant

commands everywhere in the world. CENTRIXS is a backbone of secure tactical communication between US' closest defence allies, including India. The reason why India will get access to CENTRIXS is because New Delhi agreed to sign the Communications Compatibility and Security Agreement (COMCASA), a "*foundational agreement*" that has the capability of dramatically change the way in which armed forces of the US and India work together. From a defence technology viewpoint, CENTRIXS is one of the systems that empowers India and the US to fight together as defence allies since both sides would have access to a shared operational picture, a single common display which shows the position of enemy targets, friendly forces and other crucial data which can greatly alter the scenario of a potential conflict.

Source: https://eurasiantimes.com

The Royal Navy type 23 frigate **HMS *Northumberland*** has been working up off Devonport ready for deployment.

Photo : Raymond Wergan, Newton Ferrers. ©



INDIAN OCEAN (Sept. 7, 2018) The Arleigh-Burke class guided-missile destroyer **USS *Michael Murphy* (DDG 112)** and the Royal Australian Navy Anzac-class frigate **HMAS *Stuart* (FFH 153)** break away from the Royal Canadian Navy replenishment ship **NRU *Asterix*** following a replenishment-at-sea during Australian exercise **Kakadu 2018. *Michael Murphy*** is participating in ***Kakadu*** to enhance maritime security skills with participating nations by highlighting the value of information sharing and multilateral coordination. (U.S. Navy photo by Mass Communication Specialist 3rd Class Morgan K. Nall/Released)

NATO increases anti-submarine training aimed at Russia

Business Insider

Christopher Woody

Sep. 05, 2018 09:33AM EST

US and European officials have warned repeatedly in recent years that more sophisticated and more active Russian submarines pose a growing threat, and NATO countries are taking steps to counter that perceived challenge. Adm. James Foggo, head of US Navy forces in Europe and Africa, has said that a "*fourth battle of the Atlantic*" — which comes after the naval warfare of World War I, World War II, and the Cold War — is already being fought, and it ranges far beyond the waters of the Atlantic.

"*I've used the term in some of my writings that we are in a 'fourth battle of the Atlantic' right now, and that's not just the Atlantic*," Foggo said on the first edition of his podcast, "**On the Horizon**," published at the end of August 2018. "*That's all those bodies of water I talked about, the Arctic, the Baltic, the Mediterranean Sea, the Black Sea, and the approaches to the Straits of Gibraltar and the GIUK gap, and the North Atlantic*," he added, referring to waters between Greenland, Iceland, and the UK that were a focal point for submarine activity during the Cold War. While some intelligence estimates from the Cold war indicate that current Russian sub activity is still well below peaks reached during that time, US and European officials have been expressing concern for the past several years. "*The activity in submarine warfare has increased significantly since the first time I came back to Europe and since the Cold War*," said Foggo, who previously commanded the Navy's 6th Fleet. "*The Russian Federation navy has continued to pump rubles into the undersea domain, and they have a very effective submarine force*." That force's readiness has also improved to the point where the Russian navy can keep some of them deployed most of the time. US Chief of Naval Operations Adm. John Richardson told lawmakers in early 2018 that Moscow has "*really stepped on the gas*," with its subs, "*both in technology and in ... the amount of time that they're spending abroad*." Russia's newest class of submarines, Yasen-class subs, have drawn comparisons to the US Navy's best subs, and Moscow matches that technical progress with the geographic advantage of being able to deploy from bases on the Barents, Baltic, and Black seas. Some of Russia's Kilo-class subs, which are newer, more advanced diesel-electric boats, are able to launch Kalibr cruise missiles from those areas and reach "*any of the capitals of Europe*," Foggo said. But, he added, the best way to track these boats is not just with other submarines. While Foggo was a planner at the Pentagon, Adm. Jonathan Greenert, then the Navy's chief of operations, "*would often say, 'Hey, look, the best way to find another submarine is not necessarily with another submarine. That's like a needle in a haystack*,'" Foggo said. A more effective approach draws on the submarine, surface, and air assets to put a full-court press on rival subs. Anti-submarine warfare "*is a combined-arms operation, and let no one forget that*," Foggo added, saying that it involved all the US Navy Europe and Africa's assets as well as those of the 6th Fleet, which is responsible for the eastern half of the Atlantic from the Arctic to the Horn of Africa. NATO navies, and many other navies around the world, have increased their attention to anti-submarine-warfare capabilities in recent years, adding improved technology and spending more time practicing. One sign of that focus has been the growing market for sonobuoys, which are used to hunt targets underwater. In early 2017, US Navy ships deployed in the eastern Mediterranean engaged in the tricky game of tracking the Krasnodar, a Russian attack sub whose noise-reducing capability earned it the nickname "*The Black Hole*." Sailors in the **USS *George H.W. Bush*** carrier strike group were tasked with following the elusive ***Krasnodar***, despite having little formal training in anti-submarine operations. "*It is an indication of the changing dynamic in the world that a skill set, maybe we didn't spend a lot of time on in the last 15 years, is coming back*," Capt. Jim McCall, commander of the air wing on the **USS *Bush***, told The Wall Street Journal at the time. Cmdr. Edward Fossati, commander of the Bush strike group's sub-hunting helicopters, told The Journal that improved tracking abilities had helped keep things even with Russian subs' improved ability to avoid detection. But the Navy has had to keep pace in what Navy Secretary Richard V. Spencer has called "*a constant foot race*." Navy surface forces let their focus on ASW "*wane considerably*" in the years after the Cold War, Bryan Clark, a senior fellow at the Center for Strategic and Budgetary Assessments, said in an early 2018 interview. "*Up until a few years ago, their ASW systems were not modernized to deal with new Russian and Chinese subs*," said Clark, a former submariner, but the Navy has added new, improved gear, like processors and towed arrays, that have increased their capabilities. "*Surface ships are able to get back into the ASW business,*" Clark said. **Source: https://www.wearethemighty.com**

The Navy's Most Deadly Submarine Ever Has a Serious Problem

September 5, 2018

The Columbia-Class, to be operational by the 2028, is a new generation of technically advanced submarines intended to quietly patrol the undersea realm around the world to ensure second-strike ability should the US be hit with a catastrophic nuclear attack.

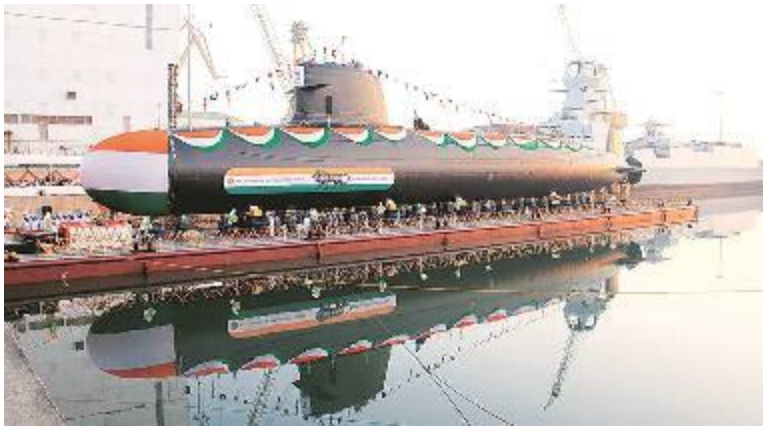
by Kris Osborn

The US Navy is charting a new course for its emerging nuclear armed Columbia-Class ballistic missile submarines while it examines potential fixes to recently discovered welding problems with early construction of some of the boat's missile tubes. The service is now conducting a range of engineering assessments and analyses to both determine the scope of the problem and explore potential remedies, officials said. Of greatest significance, perhaps, is that Navy officials tell Warrior Maven they do not expect any delay or major problems with the long-term development of the new submarines. Developers say the reason for this is simple - Navy planners built-in procedural time and

flexibility to allow for adjustments and needed fixes as part of the process along the way. "*The Navy purposely planned for early construction of the Common Missile Compartment including missile tubes and first article quad pack, to mitigate risks such as these, and construction start for Columbia remains on schedule in 2021*," William Couch, spokesman for Naval Sea Systems Command, told Warrior Maven. Accordingly, formal production is still scheduled for 2021 as a key step toward fielding a new generation of nuclear-armed submarines to serve all the way into and beyond the 2080s. The Columbia-Class, to be operational by the 2028, is a new generation of technically advanced submarines intended to quietly patrol the undersea realm around the world to ensure second-strike ability should the US be hit with a catastrophic nuclear attack. While the Columbia-Class is intended to replace the existing fleet of Ohio-Class ballistic missile submarines, the new boats include a number of not-yet-seen technologies as well as different configurations when compared with the Ohio-Class. The Columbia-Class will have 16 launch tubes rather than the 24 tubes current on Ohio boats, yet the Columbias will also be about 2-tons larger, according to Navy information. General Dynamics Electric Boat has begun acquiring long-lead items in anticipation of beginning construction; the process involves acquiring metals, electronics, sonar arrays and other key components necessary to build the submarines. For many years now, early construction, prototyping and research and development work on the submarine's technologies have been underway - particularly with the missile tubes. Developers with submarine-maker General Dynamics Electric Boat have been working on "*tube and hull forging*," a process where missile tubes are welded into quadrants or "four packs" before being inserted into larger submarine modules being built for the boats. The missile tube complication, which has been largely determined to involve only one of several subcontracting vendors building the tubes, is now being resolved. Some of the impacted tubes are now being evaluated. The subcontractor involved, called BWXT, has already delivered some of the missile tubes to the builder's yard. "*All BWXT welding requiring volumetric inspection has been halted until the investigation is complete*," Couch said. The Navy has not formally accepted delivery of the missile tubes, as they will ultimately be accepted prior to shipment to the UK or at **USS *Columbia*** delivery, service officials said. Navy is working with the UK on a common missile compartment to be used for both the new US Columbia Class and the UK's emerging Dreadnought ballistic missile submarines. The Navy is working closely with the UK to evaluate impacts to Dreadnought, Couch added. "*Impacts to the delivery of missile tubes to the UK will be assessed upon completion of GDEB's (General Dynamics Electric Boat) efforts to define and scope next steps*," Couch said in a statement. Both the Pentagon and the Navy are approaching this program with a sense of urgency, given the escalation of the current global threat environment. Many senior DoD officials have called the Columbia-Class program as a number one priority across all the services. "*The Columbia-Class submarine program is leveraging enhanced acquisition authorities provided by Congress such as advanced procurement, advanced construction and multi-year continuous production of missile tubes*," Couch added in a previous statement. **Source: https://nationalinterest.org**

Mazagon Dock to deliver second Scorpene class submarine by year end

After commissioning its first submarine, *Kalvari*, in December 2017, the company will deliver five other submarines to the Navy by 2022.



The submarine ***Khanderi***. **Express photo**

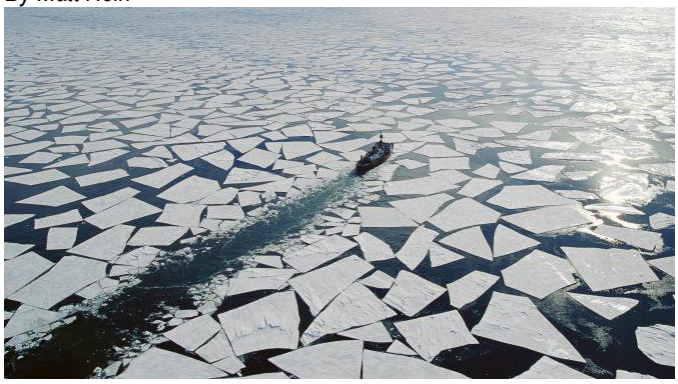
The Mazagon Dock Limited (MDL) will deliver its second submarine, ***Khanderi***, to the Navy by the end of this year, senior MDL officials said on Thursday. After commissioning its first submarine, ***Kalvari***, in December 2017, the company will deliver five other submarines to the Navy by 2022. According to the deal signed between Navy and MDL in October 2005, the company is required to build six Scorpene class submarines — primarily diesel-electric attack submarines — in collaboration with M/s Naval group of France, under Project 75. Senior MDL officials said that more than 50 per cent of its engineering content has been manufactured in India. "*We will deliver the second submarine to the Navy by the end of 2018. Most of its trials have been conducted. The third submarine is being readied for sea trials and will be commissioned by next year. We will deliver the remaining submarines in 2020, 2021 and 2022, respectively*," said Captain Rajiv Lath, Director of MDL submarine and heavy engineering. The submarines entail advanced acoustic silencing techniques and produce lower levels of radiated noise. Senior MDL officials said ***Khanderi*** is equipped with an integrated platform management system that will ensure better maneuvering of periphery and undertake multifarious types of missions, including anti-surface and anti-submarine warfare, intelligence gathering, mine laying as well as area surveillance up to six meters of the periphery. "*The total project cost of building the submarines is estimated to be Rs 30,000 crore. We aim to undertake more ship and submarine repair works, which will give MDL an average revenue of Rs 1,000 crore per vessel,*" an MDL official said. Officials added that they are in talks with other

countries to discuss possibilities of exporting underwater vessels and unmanned submarines. "*Many foreign delegations from Europe and America have visited our docks, expressing interest in our ship-building capacity. We are eyeing many high value orders in the future*," the MDL official said. The company also plans to use up to 40 acres at Nhava in Navi Mumbai to develop a ship yard, which will have facilities to build, repair and lift ships. The submarine ***Khanderi*** has been named after the Island fort of Chhatrapati Shivaji Maharaj, which played a vital role in ensuring his supremacy at sea in the late 17th century. ***Khanderi*** is also another name for the tiger shark. The submarine was launched (first entered water) on January 13, 2017. It can easily communicate with other components of naval task force, including ships and aircraft. It can also go on multifarious types of missions undertaken by any modern submarine, such as anti-submarine and anti-surface warfare, intelligence gathering, area surveillance and mine laying. **Source: The Indian Express**

Why Icebreakers Matter

September 5, 2018 Guest Author

By Matt Hein

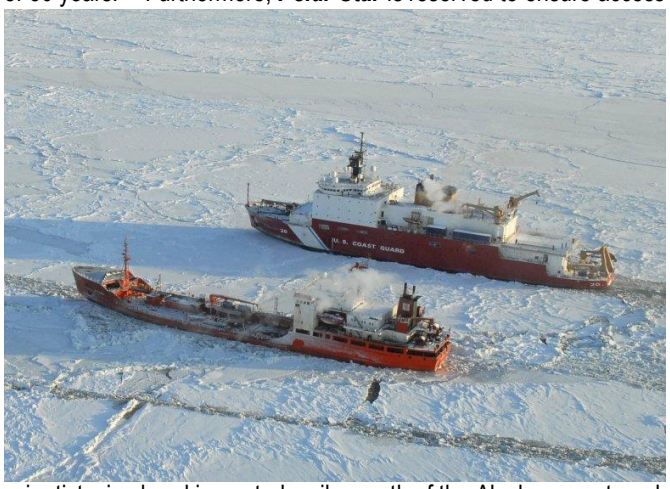


16 May 2003, Antarctica — Coast guard icebreaker travels through ice floes which have broker off sea ice edge in late summer, McMurdo Sound, Antarctica (Image by Norbert Wu/Minden Pictures/Corbis)

One week before Christmas 2017 the **USS *Little Rock*** left Buffalo, New York on its maiden voyage to its future homeport in Florida. The crew of the newest Littoral Combat Ship in the Navy proudly entered the port of Montreal seven days later as part of a goodwill port visit between the United States and Canada. A frigid cold snap sank in while ***Little Rock*** sat pier-side and the St. Lawrence river froze over three weeks earlier than anticipated. Commercial icebreakers, frequently used to navigate the St. Lawrence river, were unable to operate after January 11th due to ice thickness, and the riverway was closed to traffic by the St. Lawrence River Authority. The ***Little Rock***, the newest ship in the Navy, left Montreal nearly three months later once ice levels decreased sufficiently for the river authority to allow commercial icebreaker operation. The story of the ***Little Rock*** unfolds across the Arctic, albeit on smaller scales, as climate change provides unprecedented access to the region. Fishermen push farther north, cruise lines dare to operate through the Northwest Passage, merchant shipping increasingly travels along Arctic routes, and native communities are forced to travel greater distances to maintain subsistence traditions. Within American waters the Coast Guard is solely responsible for providing mariners with safety from the elements, illicit activity, and man-made disasters. With limited resources they accomplish their mission in the areas they are able to access. With only two operable icebreakers the Coast Guard is unable to safely conduct their mission in regions which are increasingly accessible due to receding ice levels. This gap in capability exacerbates international and economic consequences of an increasingly accessible Arctic against American interests. To conduct sustained Arctic operations in the national interest new icebreakers are needed and soon.

Current Capability

The U.S. Coast Guard lists three active commissioned icebreakers; **USCGC *Polar Star, Polar Sea***, and ***Healy***. Of the three, only the ***Polar Star*** and ***Healy*** are capable of Arctic operations. The ***Polar Sea*** suffered major propulsion problems in 2010, relegating it to a spare part depot for the ***Polar Star***, and where both ships are over 10 years past their designed service life of 30 years. [1] Furthermore, ***Polar Star*** is reserved to ensure access to McMurdo station, rendering *Healey* the only commissioned vessel to access Arctic ice-covered regions.



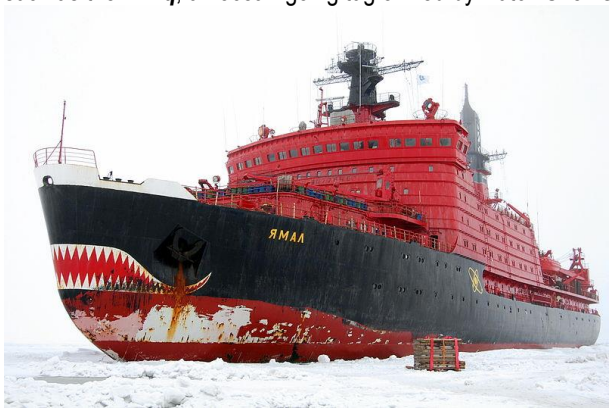
The medium-class icebreaker ***Healy*** breaks ice around the Russian-flagged tanker ***Renda*** 250 miles south of Nome Jan. 6, 2012. (P.O. 1st Class Sara Francis/US Coast Guard)

The Coast Guard has 11 statutory missions, nine of which pertain to the Arctic and require icebreaking capability. [2] The ***Healy*** solely executes these missions from the sea. In 2017 these missions included extensive research with 40 embarked scientists, ice breaking patrols miles north of the Alaskan coast, and search and rescue (SAR) training. These missions also

include protection of marine living resources, drug interdiction, search and rescue, and migrant interdiction, which haven't required persistent icebreaking capabilities in the recent past. Increasing levels of human activity in the Arctic indicate those missions are increasingly relevant and the recent dearth of those mission sets reflects a period of good fortune rather than trends to be continued. Finally, the Coast Guard allots 185 "Days Away from Homeport" (DAFH) per ship per year, including transit time and port visits to actual on-scene operations. [3] Budgeting *Healy's* DAFH reveals, optimistically, an icebreaker availability during only one-third of every year. [4] The Coast Guard's Arctic icebreaking forces are very capable but extremely limited. They are being are asked to do more now and will be asked to do even more in the future, but this will far outstrip existing resources.

Why Icebreakers Matter

Rapidly decreasing ice levels and increased human activity in the Arctic change the mission from seasonal operations to a year-round endeavor. Historically, Arctic patrols occur during warmer months when activity levels necessitate a Coast Guard presence. In 2012 a record low minimum sea ice extent was observed, followed closely by record low sea ice maximum extent in 2016. [5] Those changes allow higher levels of human activity throughout the year, requiring a concomitant year-round icebreaking capability. The lack of capability immediately threatens U.S. interests in the region including energy security, disaster response, and Maritime Domain Awareness. In the winter of 2011 Nome, Alaska nearly ran out of fuel used for heating and cooking. A Russian ice-hardened tanker managed to break through extensive inshore ice to provide refueling but no American assets were able to provide similar services. The refueling shows a fortunate coincidence of Russian capability and American need, however, an alternative scenario can be easily imagined. [6] Privatized icebreakers such as the ***Aiviq***, an ocean-going tug owned by Dutch Shell Oil company, provide extremely limited ability to assist offshore developments in production and disaster response. [7]



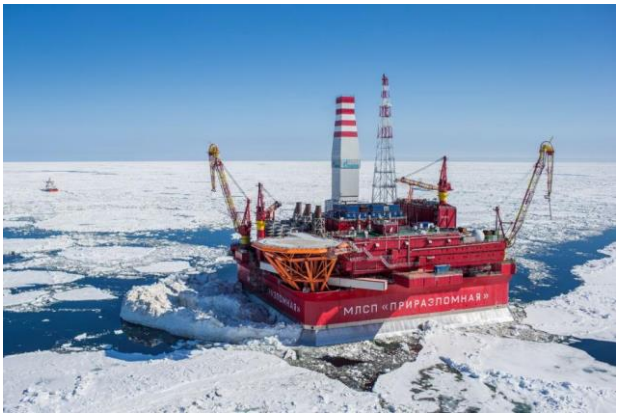
Russian nuclear Icebreaker ***Yamal*** during removal of manned drifting station North Pole-36. August 2009. (Wikimedia Commons)

In congressional testimony, following the 2010 British Petroleum Deepwater Horizon oil spill, USCG Admiral Thad Allen stated the Coast Guard doesn't have enough icebreakers to respond to a major spill north of the Alaskan coast. [8] The World Wildlife Foundation models spills in oil and gas producing regions, such as the Barents and Beaufort Seas, and claims the ecological damage of those potential spills is greatly exacerbated by a lack of access which is in turn worsened by a lack of icebreakers. [9] Maritime Domain Awareness requires constant monitoring via multiple sensors and engagement from multiple platforms. Much of this can be accomplished by remote sensing but human knowledge and experience on how to operate in Arctic environments cannot be replaced. [10] The crew of the *Healey* comprises the majority of American government maritime experience in Arctic ice-bound environments, revealing a major gap in Maritime Domain Awareness. These examples project the need for more icebreakers to operate in the Arctic, although many needs already go unmet. A 2011 report by the Department of Homeland Security Inspector General found the Coast Guard delinquent in meeting four interagency icebreaking missions including persistent assured access for the Department of Defense, fisheries enforcement, search and rescue, and winter research for the National Science Foundation and National Aeronautics and Space Administration. [11] In total, governmental agencies made 32 requests for icebreaking services from the ***Healy*** in 2017, only 25 of which went fulfilled. [12] Central to each deficiency is icebreaker availability, and even more requests could have been filed. Using the aforementioned "*Days away from Homeport*" allotment provided by the Coast Guard, a minimum of three icebreakers is required to provide persistent access and capability in the Arctic. Critics contend that procuring more icebreakers is optimal but untenable within current budget constraints. The Coast Guard High Latitude Mission Analysis Report in 2010 concluded six icebreakers (three medium and three heavy) are required to meet mission demands in the Arctic and Antarctic. [13] That same report cites four core missions as the minimum requirements driving icebreaker acquisition: Arctic West Science, Arctic North Patrol, McMurdo Station resupply, and Polar Freedom of Navigation missions. [14] The consensus of multiple sources is that specific Arctic missions are going unmet and the minimum procurement requirements to close that gap illuminate the desperate need for more icebreakers.

International Implications

Among Arctic nations the United States uniquely lacks robust icebreaking capabilities. Russia already boasts an icebreaking fleet 46 strong, including seven nuclear-powered vessels. Other nations, such as Finland, Canada, and Sweden all employ seven or more icebreakers, providing sufficient capability to operate routinely in Arctic waters. [15] This disparity in capability opens the door for external intervention against American interests in the Arctic and challenges American leadership on Arctic issues. The icebreaker gap exacerbates traditional maritime issues such as freedom of navigation and commerce by predetermining which nations can access waterways. Russia notably exploits this difference in the North Sea trade route

where merchants may transit, aided by Russian icebreakers, for a hefty toll. [16] Icebreakers further enable Arctic nations to conduct regular commerce in the Arctic during times the U.S. is unable to without their assistance. Additionally, as the *Little Rock* incident shows, ice heavily limits military mobility. The lack of domestic icebreakers makes freedom of navigation vulnerable to the whims and interests of countries with the capacity to outdo U.S. efforts. Ongoing international arbitration over Arctic economic claims under the United Nations Convention on the Law of the Sea could become a moot point if nations able to access disputed areas do so unilaterally and lay de facto claim to the resource rich region.



Russian oil platform in the Arctic Ocean. (Photo by Krichevsky)

Freedom of access to Arctic areas has broader implications than the immediate effect of restricted access. International institutions are resource driven. Those who hold relevant resources in an international organization (such as NATO) are able to drive the agenda for how those resources are used. To date, the Arctic Council has passed three binding agreements. Two of those agreements, on search and rescue and maritime oil spill response, pave the way for icebreaker-laden states to take larger roles in the implementation of those agreements. If the United States is unable to match resource contributions for these efforts then the U.S. bargaining position for future Arctic Council resolutions will be significantly hampered. It might seem that parity in the number of icebreakers is a worthwhile outcome. However, icebreaker parity with Russia is an undesirable and unachievable goal for American Arctic operations. The Arctic is central to the Russian way of life, demanding more and better ways to cope. An American icebreaking fleet simply needs the ability to access areas in pursuit of national interests and contribute to international efforts under existing agreements. Given the relative size of the American Arctic coastline and population compared to other Arctic countries a small but capable icebreaking fleet is sufficient to ensure American interests.

Funding and Procurement

The lack of action to date stems from a lack of funding and not recognition of the need. The Coast Guard traditionally lacks the independent funding to procure icebreakers or other large-scale expenditures. Consequently, large Coast Guard acquisitions frequently partner with the Navy Shipbuilding and Conversion Fund (SCF) to make the size of those acquisitions tenable within the context of the Coast Guard's meager budget. The Coast Guard's Procurement, Construction, and Improvement Fund is responsible for all new purchases and upgrades of the Coast Guard's entire fleet with only a $1.54 billion budget. [17] Conversely, the Navy was appropriated over $20 billion in 2017 explicitly for new ship construction. [18] Icebreaker procurement considerations are included in the Navy's new shipbuilding budget as part of a "block-buy" contract system. Under a block-buy system procurement costs over multiple years provide the total cost of a project as it is built. This process, combined with fixed cost contracts, helps decrease the total cost of the project and budget demands on a yearly basis. The Consolidated Appropriations Act of 2018 allots the Navy's Shipbuilding and Conversion Fund $150 million for domestic construction of a heavy polar icebreaker to be built and transferred to the Coast Guard. [19] This initial step is crucial, but insufficient, toward reestablishing an icebreaker fleet. Detractors argue that foreign construction or leasing provide the best path to more icebreakers. The first option happens to be illegal, requiring a waiver from the president for foreign construction of military platforms. [20] The political component of the equation removes the likelihood that foreign construction is viable considering domestic shipyards are capable of producing these ships. Additionally, domestic production provides domestic shipbuilding experience, a significant factor in reduced costs for purchases of multiple icebreakers. Because of those learned efficiencies projections for purchase drop nearly $200 million as additional platforms are purchased. [21] Leasing is similarly constrained by the lack of available assets on the global market to provide medium to heavy icebreaking capability. [22] To lease a heavy icebreaker it would have to be built, a process that takes a comparable amount of time to building them domestically. The only commercial icebreaker available for lease, the ***Aiviq***, has a poor track record of performance, including responsibility for the grounding of a drilling rig in 2012 when it lost propulsion. For legal, political, and marketplace reasons leasing and foreign construction are untenable options for meeting American icebreaker needs.

Conclusion

Climate change provides unprecedented Arctic access but much of the region remains restricted by ice. The United States Coast Guard uses icebreakers to meet that challenge. Established icebreaker levels fail to meet current interagency demands and are projected to meet even fewer of those demands. International icebreaker competition has immediate economic first-mover consequences and institutional repercussions for nations with adequate Arctic resources. Building heavy icebreakers in the short-term to complement *Healy* proves the most tenable option while meeting the minimum requirements for Arctic capabilities and international obligations. In a resource-constrained budgetary environment prioritization of other interests prevented purchase of replacement icebreakers. Recent steps toward expansion of the

icebreaker fleet are encouraging but remain insufficient to meet the minimum force level needed for persistent American Arctic presence.

Matt Hein is a Surface Warfare Officer currently studying for his Masters in Security Studies at Georgetown University. He can be found on twitter @Matt_TB_Hein. These views are presented in a personal capacity.

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Drones driven by AI will track illegal fishing in African waters

By Katy Scott, CNN

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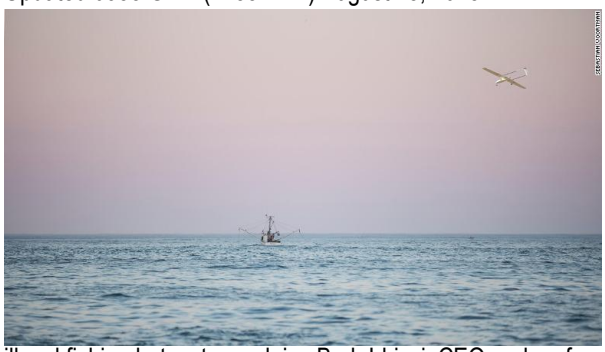

CNN)

Across the African continent, drones are finding innovative uses -- from monitoring displaced populations, to delivering critical medical supplies. Moroccan technology startup ATLAN Space is developing artificial intelligence (AI) to guide autonomous drones so they can scan large areas for "*environmental crimes*" like illegal fishing, poaching or deforestation. In June, ATLAN Space won the National Geographic Society's $150,000 Marine Protection Prize to implement a pilot project to combat illegal fishing in the Seychelles. Drones will be armed with information about illegal fishing hotspots, explains Badr Idrissi, CEO and co-founder of ATLAN Space. Once a drone detects a boat, AI will enable it to verify whether it is a cruising boat, tanker or fishing vessel. The drone will then establish whether the boat is operating inside a marine protected area, and if it is an authorized fishing vessel. If it concludes that the activity is illegal, the drone will register the boat's location, identification number, and number of people on board and relay this information to authorities via satellite. Currently governments employ light aircraft or coast guard vessels for this kind of surveillance. "*With artificial intelligence we are able to replace the pilot, the data analyst, transmission equipment, and with that we can reduce the cost*," says Idrissi, a former account manager at Microsoft. He adds that using drones guided by AI would relieve coast guards from their monitoring duties and allow them to focus on intercepting vessels. According to Idrissi, ATLAN Space technology can be integrated in any type of drone. He says the operational range could reach up to 800 kilometers

when using drones equipped with a combustion engine. Idrissi, 37 and co-founder Younes Moumen, 35, both based in Rabat, started developing the technology when they learned that illegal fishing costs coastal countries in West Africa approximately $2.3 billion every year. "*We consider ourselves a partner of government to build a sustainable solution to the issues and challenges they are facing*," Idrissi says. Across Southern Africa, drones are used to protect elephants and rhinos from poaching. In Sudan, a startup wants to drop Acacia tree seeds from the sky to tackle desertification, and in South Africa, drones are used in agriculture to monitor crop health and detect disease. In Rwanda, drones deliver vital medical supplies like blood and vaccines to remote areas. They are also used for critical humanitarian missions, like mapping displaced people in Niger, Burkina Faso and Uganda. In Lilongwe, Malawi, UNICEF partnered with the government to set up a testing corridor in 2017 to investigate how drones can be used for humanitarian work. Over the past year, universities and private sector companies have used drones to map cholera outbreaks and mosquito breeding sites in the corridor. "*The idea is to see what's working in Malawi and be able to scale the solutions to a global level*," UNICEF's Michael Scheibenreif tells CNN. "*Drones will substantially change our way of working in Africa*," says Scheibenreif. "*As a leapfrog technology they can help us to deliver goods like medicine quickly ... in places where developed transportation networks or roads do not exist*." But drone expert and World Bank Consultant Frederick Mbuya, who has previously worked on drone mapping projects in Tanzania and Zanzibar, cautions that drones, while hugely effective in land surveying and delivery of medical supplies, are not always the silver bullet they're hyped up to be. "*Drones have a huge potential to impact Africa, and not just the rich, all areas of Africa*," he tells CNN. "*But a lot of work needs to be done*." As of July 2017, only 14 African countries had dedicated drone regulations, according to an African Union report. But Mbuya stresses that often these regulations are too restrictive and exorbitant licensing fees can price local startups and operators out of the market. He adds that if drone technology is going to change Africa, Africans have to be able to enter business using the technology and profit. Idrissi agrees that drone technology and startups should be homegrown. "*We are based in Morocco because we believe Africa has reached maturity to build solutions that can really tackle the challenges and issues that Africa is facing*," he says. **Source: nhttps://edition.cnn.com**

Keep in mind that this may nhot be the final solution, as vessels are still needed at sea to arrest.

Workhorses of the sea

The ***Ariadne*** moored in Eemshaven **Photo : Alexander Gorter ©**