

As Arctic Sea Ice Melts, Deputy CNO Says U.S. Subs Will Become More Important



The Los Angeles-class submarine USS Annapolis is on the surface of the Arctic Ocean after breaking through three feet of ice during Ice Exercise 2009. U.S. Navy

ARLINGTON, Va. – Submarine forces operating in the Arctic will become “more and more important,” as the polar ice melts, opening up more navigable blue water to commercial and naval vessels, a top U.S. Navy leader says.

The U.S. Submarine Force has traveled under the Arctic ice for decades, and continues to add to the Navy’s understanding of the environment by testing operating systems, conducting valuable scientific research and partnering with allies in exercises like Ice Exercise (ICEX) 2020, Vice Adm. Phillip Sawyer told webinar participants Nov. 16 at the annual symposium of the Naval Submarine League.

The increasing decline of sea ice in the Arctic has opened potential sea lanes in the summer months, sparking territorial disputes. Russia, Norway, Canada and the United States all have boosted their military presence in the Arctic at a rate not seen for decades. China, calling itself a near-Arctic nation, is eager to use a trans-Arctic route to move its exports and is building its own ice breakers. Russia is placing cruise missiles on its new heavy ice breakers.

“As the polar ice recedes and more of the Arctic becomes a blue Arctic, this will present opportunities and challenges,” said Sawyer, Deputy Chief of Naval Operations for Operations, Plans and Strategy. Noting submarines are the Navy’s primary anti-submarine warfare (ASW) platforms, Sawyer added, “the submarine forces working the Arctic will become more and more

important.”

ICEX is a biennial submarine exercise to promote interoperability between allies and partners to maintain operational readiness and regional stability in the Arctic. In March, two U.S. attack submarines, the USS Connecticut and the USS Toledo, joined forces from the United Kingdom, Canada, Norway and Japan in the Arctic Sea for ICEX 2020.

“While the submarine force can go where other naval units can’t, ICEX is but one of several High North exercises the Navy executes with allies and partners.” Sawyer said. In May, the U.S. 6th Fleet conducted a bilateral ASW exercise with the Royal Navy above the Arctic Circle. Four ships, including a U.S. submarine, and a U.S. P-8A maritime patrol and reconnaissance aircraft worked together in the Norwegian Sea.

Biden Focus on Infrastructure, Environmental Improvements Could Lift Jones Act



The new administration is expected to bolster support for the Jones Act. Crowley

ARLINGTON, Va. — President-elect Joseph R. Biden’s Jr. twin goals of rebuilding America’s infrastructure, while protecting the environment, could bolster support for maintaining the 100-year-old law that protects the U.S. maritime industry, according to a Washington think tank analyst.

The Biden campaign “had expressed interest in new infrastructure, in new green initiatives, and the maritime industry is actually a pretty good confluence of the two,” Tim Walton, a fellow at the Hudson Institute’s Center for Defense Concepts and Technology, told a Navy League webinar marking the 100th anniversary of the Jones Act.

Also known as the Merchant Marine Act of 1920, the Jones Act bars foreign-built, foreign-owned or foreign-flagged vessels from conducting coastal and inland waterway trade within the United States and between the United States and its non-contiguous states and territories such as Alaska and Puerto Rico.

The long-standing legislation could figure in plans “where we’re talking about building maritime infrastructure, building low carbon emitting transportation mechanisms, green industries that support our economy in the oceans as we build a blue economy,” Walton added. A “Blue Economy,” according to the World Bank, is built on sustainable use of ocean resources for economic growth, improved livelihoods and jobs and ocean ecosystem health.

Critics say the aged Jones Act has led to higher shipping costs, which are passed along as higher prices to vendors, retailers and consumers. They also maintain higher costs have driven the commercial shipbuilding industry overseas, leading to a smaller pool of qualified U.S. merchant mariners.

Without the law, U.S. Navy and Coast Guard officials have argued there would be no pool of U.S. noncombat ships – or trained American seafarers to man them – in a war or other national emergency. During the Nov. 12 webinar, former Coast Guard Commandant Adm. Paul Zukunft (retired) called for “a coherent maritime national strategy that connects with a national security strategy. That’s where the Jones Act needs to be woven into our national security strategies.”

Former U.S. Rep. Ernest Istook, an Oklahoma Republican, said the need for such a strategy is evident, in a world where 90% of trade is moved by ship, and Great Power competitor China is the world's biggest shipbuilder, by some measures has the world's largest navy, and is expanding its commercial ports and naval bases around the world.

Walton's comment about Biden came after a webinar viewer asked where the Democrat stood on the Jones Act. Both Biden and President Donald Trump support the law, although Trump considered, but later rejected, an extended waiver for foreign carriers to deliver liquid natural gas to hurricane wracked-Puerto Rico and LNG-dependent New England States. Biden incorporated Jones Act support in his campaign's Buy American/Ship American strategy.

"Historically, the U.S. maritime industry has been a leader in technology," Walton said, "but now in the 21st century, the Biden administration, as it appears it's going to be, will have an opportunity, I think, to take some leadership and, as Adm. Zukunft said, actually craft an integrated national strategy for the maritime industry, and then implement it."

To read the new Navy League special report on the Jones Act and its impact, go [here](#).

Naval Community College: First Major Step to Improve Learning as a National

Security Priority



Naval Postgraduate School students walk in formation during the university's winter quarter graduation ceremony in this 2013 photo. Now the Navy is starting the U.S. Naval Community College, under the Education for Seapower Strategy. U.S. Navy / Mass Communication Specialist 1st Class Grant P. Ammon

The U.S. Navy Department's Education for Seapower Strategy is on track to roll out its first major project in 2021, a community college to improve intellectual development and military professionalism among enlisted personnel.

The U.S. Naval Community College (NCC), aimed at turning enlisted members of the sea services into critical thinkers as well as better warfighters, is preparing to launch a pilot program in January with upwards of 500 Sailors, Marines and Coast Guardsmen.

The pilot will work with civilian universities and colleges to deliver distance learning in subjects such as nuclear engineering, cybersecurity, data analytics, ethics and leadership. Eventually, the NCC will offer a common core of Naval/Maritime studies to provide participants with a similar grounding to the standardized naval science courses taught at the U.S. Naval Academy and Naval ROTC programs, according to NCC President Randi Cosentino.

"The idea is that we will deliver the naval and warfighting components of our academic programs, and we will partner with top colleges and universities that deliver exceptional online programs and outcomes in the program areas in which they excel," Cosentino explained in a recent email exchange with Seapower.

More than 100 institutions have expressed interest in working with the NCC. The goal is to narrow that down to six to 10 core college and university partners, explained Cosentino, who

was appointed NCC's first president in April. Prior to that, she was chief academic officer at Guild Education, which works with Fortune 500 companies like Disney and Walmart to provide college-level education and training to their workforces.

Cosentino, who has a doctorate in higher education administration from the University of Pennsylvania and an M.B.A from Harvard University, said the pilot has two purposes, first to place naval students in the best online programs in the country delivered over modern learning systems. Secondly, to learn about successful course and program completion as the USNCC matures.

A second pilot, with as many as 5,000 students, is planned for 2022, with classes to begin in the Summer/Fall timeframe. That pilot will enroll students in targeted associate degree programs at several partner institutions. Feedback from that pilot will help finalize NCC's approach to student support, partnerships with colleges and universities and delivery mechanisms to make sure the new school can achieve its mission.

That mission "is to produce graduates steeped in naval traditions and values, who have sound ethical decision-making abilities, possess improved critical thinking skills, and possess a deeper understanding of the complex global maritime environment in which they operate," Cosentino told Seapower.

Following the lead of the 2018 National Defense Strategy, which declared professional military education has "stagnated," both Marine Corps Commandant Gen. David Berger's Planning Guidance and Chief of Naval Operations Adm. Mike Gilday's January 2019 Frago (fragmentary change) order stressed the need for learning as a warfare enabler.

Despite Navy-Wide Precautions, COVID-19 Turns up on USS Theodore Roosevelt Again



U.S. Navy Rear Adm. Stu Baker, commander, Carrier Strike Group Nine, gives blood for a serology study aimed at identifying antibodies associated with COVID-19 aboard the aircraft carrier USS Theodore Roosevelt (CVN 71) April 22, 2020. U.S. Navy / Mass Communication Specialist Seaman Kaylianna Genier ARLINGTON, Va. – No new cases of COVID-19 have been reported aboard the aircraft carrier USS Theodore Roosevelt, where “a small number of Sailors” tested positive for the novel coronavirus a week ago, a Navy spokesperson said Oct. 21.

The Roosevelt, the first U.S. warship to battle a COVID-19 outbreak at sea in March, was conducting routine training off the coast of California Oct. 15 when the Sailors self-reported after experiencing symptoms. They received immediate medical treatment and were transported off the ship by helicopter to Naval Air Station North Island for isolation, said Cmdr. Zach Harrell, spokesperson for Commander, Naval Air Forces. The Roosevelt, training completed, returned to its homeport at San Diego on Oct. 20.

“All members of the crew who were in close contact with the Sailors who tested positive have tested negative for COVID-19 and were placed in quarantine in accordance with the Centers for Disease Control and Prevention and Navy guidance. The number of Sailors that were placed in quarantine amounts to less than one percent of the crew,” Harrell said in an emailed statement. In a brief phone call, Harrell told Seapower that “there haven’t been any changes to the numbers [of cases] from what was reported last week.” Defense Department policy bars

disclosing exact numbers of COVID-19 cases on any ship or installation. Only cumulative numbers for each service are shared by the Pentagon.

The latest figures released by the Navy on Oct. 21 showed 11,508 uniformed personnel have tested positive for the novel coronavirus COVID-19. Of that number, 10,503 have recovered. Only 10 cases currently require hospitalization, and one Sailor has died since the pandemic began last winter. That is in comparison to more than eight million cumulative cases for the United States and over 200,000 deaths. Unlike many civilian leaders, Navy and Pentagon officials leaders have instituted strict requirements to halt the spread of COVID-19, including frequent testing, mandatory face coverings where social distancing is not possible and quarantining crews before they go to sea or report to new posts.

The Roosevelt became a flashpoint in the early days of the pandemic when scores of crew members became infected beginning in late March, 15 days after the carrier made a port visit to Da Nang, Vietnam. Stopping at Guam for a scheduled visit on March 27, the ship's commander Capt. Brett Crozier began disembarking crew as the number of Sailors testing positive for the virus continued to rise, eventually topping 1,000 cases. Finding suitable accommodations for thousands of crewmembers was a slow process, prompting Crozier to write a March 30 letter to top Navy officers pleading for faster intervention from his superiors

Crozier was relieved of command April 2 by then-acting Navy Secretary Thomas Modly after his letter was leaked to the San Francisco Chronicle, sparking an outcry and worldwide media attention over the captain's actions and the fate of the carrier's crew. Modly resigned days later after his handling of the crisis, including Crozier's firing, touched off a political firestorm. A Navy investigation later upheld Crozier's removal.

Marine Corps Assistant Commandant Tests Positive for COVID



Lt. Gen. Gary L. Thomas, deputy commandant, speaks during his promotion ceremony at the Home of the Commandants, Marine Barracks Washington, Washington, D.C., Oct. 2, 2018. U.S. Marine Corps / Sgt. Hailey D. Clay

ARLINGTON, Va. – The Assistant Commandant of the U.S. Marine Corps, Gen. Gary Thomas, has tested positive for the novel coronavirus COVID-19, according to the Marine Corps.

Thomas, who tested positive Oct. 7, had been self-quarantining since Oct. 6, when he and several other senior military leaders were notified that Coast Guard Vice Commandant Adm. Charles Ray had tested positive for COVID-19 a day earlier. Ray had attended meetings with them at the Pentagon the previous week. Some of the meeting attendees were members of the Joint Chiefs of Staff, Pentagon spokesman Jonathan Hoffman said, adding that “all potential close contacts from these meetings are self-quarantining.”

Marine Corps Commandant Gen. David Berger, a member of the Joint Chiefs, was away and did not attend the Pentagon meetings. Thomas, as assistant commandant, was there in his place.

Thomas was the first meeting attendee besides Ray to test positive. “In accordance with established Marine Corps COVID policies, Thomas, 58, will continue to quarantine at home. He is experiencing mild symptoms, but otherwise is feeling well,” according to a Marine Corps statement.

The Coast Guard issues a similar statement saying Ray would quarantine from home and “any Coast Guard personnel that were in close contact will also quarantine.”

As of Oct. 7, the latest Defense Department figures available, there have been 47,658 cases of COVID-19 among all the armed services, including: 17,803 in the Army; 10,585 for the Navy; 7,407 among the Air Force; 5,942 for the Marine Corps and 5,596 among the National Guard. There have been just eight COVID-related deaths among all the services. There were 10,751 total cases among civilian Defense Department employees, including 60 who died from the disease.

AeroVironment Unveils Improved Version of Switchblade One-Way Attack Drone



The larger Switchblade 600 can engage with bigger targets and has a longer endurance. AEROVIRONMENT INC.

ARLINGTON, Va. – Unmanned aircraft maker AeroVironment has developed a bigger, badder version of Switchblade, its man-portable, tube-launched, loitering small aerial missile system.

The Switchblade 600 has greater capabilities for engaging larger, hardened targets with multi-purpose anti-armor ammunition at longer distances than the original Switchblade, now called Switchblade 300, AeroVironment officials said Oct. 1.

Both versions of small loitering missile, or loitering munition, are unmanned aerial vehicles designed to engage fixed and moving ground targets beyond line-of-sight with an explosive warhead. While launched from a tube like a mortar shell, they can “loiter” in the air for an extended period of time before striking, giving the operator time to decide when and what to attack.

Switchblade 600 comes with a patented “wave-off” feature that allows operators to abort the mission at any time if non-combatants are spotted too close to the target. If the situation changes, the feature allows operators to re-engage either the same target or others, avoiding collateral damage.

Larger than the back-packable 5.5-lb. (2.5 kg) Switchblade 300, the 600 model, weighing 50 lbs. (22.7 kg) is still considered to be portable and takes about eight minutes longer to set up than the two minutes for the smaller version. Both platforms are deployed via the launch tube in which they are transported. The new version has greater endurance, 40 minutes of flight time versus 15 minutes for the 300. It also comes with a high performance electro-optical/infrared gimballed sensor suits, precision flight control and a touchscreen, tablet-based fire control system with the option to pilot the loitering missile manually or autonomously.

The \$76 million contract awarded recently for Switchblade 300 procurement and support as part of the U.S. Army’s Lethal Miniature Aerial Missile System (LMAMS) program “is a testament to its battle-proven track record,” said Wahid Nawabi, AeroVironment’s president and CEO. Since 2012, Switchblades have been fielded by the Army, Marine Corps and Special Operations Command.

AeroVironment has been developing the Switchblade 600 with several Defense Department customers, said Brett Hush, senior general manager of Product Line Management for AeroVironment’s Tactical Missile Systems. “But the only one that we can talk

about publicly at this point in time is the U.S. Marine Corps,” where AeroVironment is one of the competitors in a program that will hold a fly off in January to down select to a single supplier.

Future War in the Pacific? Think Guadalcanal, Marine Corps Planners Say



F4F Wildcat fighters of the U.S. Navy and Marines lined up on Henderson Field on Guadalcanal, Solomon Islands, Jan 1943. United States National Archives

ARLINGTON, Va. – The challenge a peer competitor like China poses in a future conflict across the Indo-Pacific region bears striking similarities to the war between the United States and Japan in the same battlespace more than 75 years ago, say two top Marine Corps planners.

Japan in 1941 was a near-peer adversary of the United States, with advanced technology, expansionist policies and a bullying attitude toward neighboring countries, says Major Gen. Gregg Olson, director of the Marine Corps Staff. While the foes and times have changed “the concepts and realities of war in the vast distances that occur in the Pacific remain the same,” he added.

Like the Marines who landed on Guadalcanal in August 1942, today’s Marines will face the same sweeping distances, vulnerable supply lines, contested air, sea – and now cyber – space limitations, across a battlespace of scattered, remote islands of steaming jungle or barren volcanic rock. “That’s

the framework for the next conflict," Olson told the virtual Modern Day Marine Exposition Sept. 23.

Victory on Guadalcanal and the rest of the Pacific came "at the cost of capital ships and thousands of lives," Olson noted. Another speaker at the conference, Major Gen. Paul Rock, director of Marine Corps Strategies and Plans, said high casualties could be likely again. "Attrition is going to be a factor in a future fight," Rock said.

While that may prove true, the Marines are not resigned to taking the same heavy casualties they suffered in the Pacific island-hopping campaign of World War II, Gen. David Berger, the commandant of the Marine Corps, insisted a day later.

Others in and out of uniform have expressed concerns about casualty rates in an Asia-Pacific conflict given, China's anti-access/aerial denial weapons platforms. Air Force Chief of Staff Gen. Charles Brown told Military Times recently that war with a peer adversary could see "combat attrition rates and risks – that are more akin to the World War II era than the uncontested environment to which we have become accustomed." Even Berger's Force Design changes to meet the expected challenges of 2030, concedes there is no avoiding attrition. "In contingency operations against peer adversaries, we will lose aircraft, ships, ground tactical vehicles, and personnel," it states, adding that force resilience – to absorb loss and continue to operate decisively – is critical.

"No, we're not resigned to high casualties, but we should not think that in a Great Power competition it's going to be clean," Berger said in livestreamed interview with Defense One on Sept. 24. Without mentioning China or Russia, Berger said neither side was "looking for a strength-on-strength fight, at all. We're not looking for a fight, period." Instead, Great Power adversaries will be using technology and other assets to target each other's weaknesses to exploit them. Although there

will be casualties “if it comes to a scrap,” he added.

The force in the Pacific will be distributed, Berger said, not to avoid creating an easy target for a knock-out blow – a tactical concern – but operationally, to be able to observe adversaries from every direction in every domain. That Berger said, also makes it very difficult for an adversary to focus their strengths.

Reinventing Logistics and Mobility are Key Elements to Force Design, Generals say



Marines with 2nd Battalion, 5th Marine Regiment (2/5), 1st Marine Division, exit an MV-22B Osprey with Marine Medium Tiltrotor Squadron (VMM) 364 as part of a training mission in support of Exercise Winter Fury 18 at Marine Corps Air-Ground Combat Center Twentynine Palms, Calif., Dec. 7. U.S. Marine Corps / Lance Cpl. Nadia J. Stark

ARLINGTON, Va. – To meet the pacing threat of a near peer competitor like China by 2030 will require changes in Marine Corps platforms, equipment and, above all, changes in thinking about logistics and mobility, according to a panel of three-star Marine generals.

Marine Corps Commandant Gen. David Berger’s top priority for his five-year tenure is redesigning the force from its decades-long focus on countering violent extremists in the Middle East to great power, peer-level competition, with special emphasis on the Indo-Pacific region.

“We have to change by 2030, the year the decade of uncertainty

begins," when Russia and China are projected to begin surpassing U.S. military advantages in technology, equipment and force size, Lt. Gen. Eric Smith, deputy commandant for Combat Development and Integration told the virtual version of the Modern Day Marine Expo on Sept. 22.

Smith, one of four deputy commandants and one assistant deputy commandant on a panel discussing what the Marine Corps will need from industry to accomplish the massive shift in less than 10 years, cited two major concerns. One is developing a combination of C5ISR with resilient sensing architecture that can operate forward deployed "in contact, in conflict, and still pass data to the joint forces and to ourselves."

The other is long range lethal fires that can "reach out and affect an adversary, make them respect our presence" but with lightweight mobility "so that we don't overburden the naval logistics or joint logistics footprint." He added that "the overarching theme" for both concerns is mobility.

While the other deputies listed specific capabilities needed or in the pipeline for aviation, information technology and ground forces, a common theme developed about logistics and how to deliver supplies, equipment and information across vast areas of contested space.

"We have to lighten the load," said Lt. Gen. Charles Chiarotti, deputy commandant for Installations and Logistics. Competitors' long-range missiles and sensors have eliminated "the luxury" of taking days to deliver an iron mountain of supplies in a war zone. In fact, installations and infrastructures, once merely places where forces were trained and equipped, in the future will be "warfighting platforms from which we deploy from, but from which we need to maneuver," Chiarotti said.

"We're not organized to meet the future capabilities that we need for tomorrow," he said, adding that inexpensive,

expendable – or at least, risk-worthy – unmanned platforms could be one solution for long-haul supply in a large, contested environment. Other problems are more complicated, however. In a GPS- and communications-denied environment, “We have to be able to reduce the signature that the logistics force brings to the battlefield,” Chiarotti said.

Likewise, Deputy Commandant for Aviation Lt. Gen. Mark Wise noted that signature management was also an issue in his sector, noting that aviation has a transport and supply role, as well as air combat and defense. “How do I make myself hard to target if they see me, also, how do I keep them from seeing me?” Sustainability is a key issue for aviation, Wise said. “We need to make sure that we are focused on the sustainment. How do I move fuel and ordnance? That is a critical enabler that we’re spending a lot of time focusing on.”

AI Will Give Pilots an Unmanned Wingman, Pentagon Officials Say



An F-16 Fighting Falcon from the 36th Fighter Squadron at Osan Air Base, South Korea, lands in Singapore. Future aircraft could fly with the aid of artificial intelligence. U.S. Air Force / Master Sgt. Val Gempis

ARLINGTON, Va. – Despite rapid advances in artificial intelligence (AI), including the recent defeat of a human fighter pilot in a virtual dogfight, AI won’t replace combat pilots, but team up with them in the future, a top U.S. Defense Department research and engineering official says.

An AI algorithm developed by Heron Systems, operating an F-16 simulator defeated an experienced F-16 fighter pilot in all five rounds of virtual air combat Aug. 20. The Alpha Dogfight Trials were the culmination of a year-long competition originally involving eight teams, as part of the Defense Advanced Research Projects Agency (DARPA) Air Combat Evolution program.

"I don't see human fighter pilots being phased out. I see their effectiveness being enhanced by cooperation with artificial intelligence systems," Dr. Mark J. Lewis, the Acting Deputy Under Secretary of Defense for Research and Engineering, DUSD(R&E), said Sept. 10 at the virtual Defense News Conference.

While the simulation's conditions were not a completely realistic version of aerial combat – the Heron system did maneuvers and took shots no human pilot would – its 5-0 score in five matches was an impressive step in research on automation in air combat and developing trust in AI systems.

"The key takeaway was the artificial intelligence system did so well because it wasn't so concerned about self-preservation. It was willing to do things that a human pilot wouldn't do and that's the advantage of artificial intelligence," said Lewis, who as acting deputy undersecretary oversees DARPA activities. "And so, I think the real answer is teaming AI with the human for the combination of both. I'm pretty confident we're going to have human pilots into the future," said Lewis, who is also Director of Defense Research and Engineering for Modernization.

A day earlier, at the opening of the Pentagon's Artificial Intelligence Symposium, Defense Secretary Mark Esper said the AI-controlled competitor's victories was "an example of the tectonic impact of machine learning on the future of warfighting." Esper said DARPA's simulations will continue in a "real-world competition" with full-scale tactical aircraft

operated by human pilots versus AI in 2024.

Rather than replacing humans, “we see AI as a tool to free up resources, time, and manpower so our people can focus on higher priority tasks, and arrive at the decision point, whether in a lab or on the battlefield, faster and more precise than the competition,” Esper said.

Acting DARPA Director Dr. Peter Highnam sounded a similar note Sept. 9, at the Unmanned Systems Defense, Protection, Security virtual conference hosted by the Association of Unmanned Vehicle Systems International (AUVSI). The agency’s original vision for AI, he said, was “to turn a room full of metal teletypes, spinning tapes and computers into that wingman, that trusted partner.”

Cruise Missiles in the Arctic Seen as Another Outcome of Great Power Competition



The crew of the Seawolf-class fast-attack submarine, USS Connecticut (SSN 22), enjoys ice liberty after surfacing in the Arctic Circle during Ice Exercise (ICEX) 2020. ICEX 2020 is a biennial submarine exercise which promotes interoperability between allies and partners to maintain operational readiness and regional stability, while improving capabilities to operate in the Arctic environment. U.S. Navy photo by Mass Communication Specialist 1st Class Michael B. Zingaro

ARLINGTON, Va. —The Arctic, already an area of competing maritime, commercial and territorial claims among nations bordering the high latitudes, is also “an ideal site” for the

launch of strategic missiles, say two retired admirals from the United States and the United Kingdom.

“Russia is building ice-capable combatants that can launch cruise missiles,” former U.S. Coast Guard commandant Adm. Paul Zukunft told a livestreamed panel discussion at the 2020 Defense News Conference Sept. 9, adding that those missiles can range as far south as Miami, Florida. The Coast Guard has only two ice breakers and one was recently sidelined by a shipboard fire. The Navy has no vessels with ice-hardened hulls (see <https://seapowermagazine.org/u-s-lacks-ice-hardened-ships-repair-and-refueling-ports-for-arctic-ops/>)

Retired British Rear Adm. Simon Williams, a former submarine commander and senior Royal Navy and Defence Ministry planner, went even further on the strategic importance of the region at the top of the globe.

“It can be used, because of its location, as a very short missile launching site,” he said. During the Cold War, when Soviet, U.S. and NATO allies’ submarines patrolled beneath Arctic seas, “we spent a huge amount of effort in tracking submarines into the High Arctic.”

While the Cold War is over “the physics don’t change,” he noted. “The reality of the High Arctic is that as a strategic area, it is of great interest for all of us for that very reason. It provides us an ideal site for the strategic launch” and with new missiles in the near future “for tactical launch as well.”

The increasing decline of sea ice in the Arctic has opened potential sea lanes in the summer months, sparking territorial disputes. Russia, Norway, Canada and the United States all have boosted their military presence in the Arctic at a rate not seen for decades. China, calling itself a near-Arctic nation, is eager to use a trans-Arctic route to move its goods

and is building its own ice breakers while partnering with Russia on commercial projects in the region.

Russia has opened a new large new base while refitting seven former Soviet bases within the Arctic Circle. Moscow also has modernized its powerful Northern Fleet, increasing submarine activity and building polar icebreakers armed with cruise missiles. In response, the United States has reconstituted the 2nd Fleet, adding the North Pole to its area of responsibility.

Currently the most viable trans-Arctic crossing is the Northern sea route bordering Russia, which considers it sovereign territory. A new Russian agency requires foreign naval ships to give 45 days advance notice before transiting, provide crew manifests and declare their intentions. The United States sees the northern route as an international waterway, said Zukunft, adding Russia's demands are complete violation of the freedom of navigation. "Unfortunately, we don't have reliable ships to challenge Russia on that front," he said, suggesting working with Canada and other allies to protect U.S. interests.