

Practical Steps to Break the Ice at the Poles: Realizing the Promise of the ICE Pact

Jordan Embree and Anna Gustafson

KEY TAKEAWAYS

The U.S. lacks sufficient capability at the Earth's poles, with only a handful of operational icebreakers, including the two currently in the Arctic.

President Trump has focused on the ICE Pact to restore America's icebreaking fleet in his second term, with implementation underway.

Pairing allied expertise, infrastructure, and capital with American demand, capital, and scale will best address this vulnerability for American national interests.

The Cold War was a globe-spanning contest with American forces facing down Soviet aggression from Middle Eastern deserts to the Arctic's glaciers. Yet, after the Soviet Union's collapse, American strategic engagement in the polar regions deteriorated. For example, the U.S.-run McMurdo Station in Antarctica has historically relied on the 49-year-old *Polar Star* icebreaker, which recently had to undergo service-life extension.¹ U.S. adversaries have since exploited this opportunity. China's "near-Arctic power" claim rests on exploiting the Northern Sea Route² while Russia stands by to support its partner's ambitions. At the same time, America's icebreaker shortage precluded an effective Antarctic strategic response as China surged into the far South.³

Reversing these trends demands U.S. presence, but for the U.S. to navigate the poles, much less secure

This paper, in its entirety, can be found at <https://report.heritage.org/ib5400>

The Heritage Foundation | 214 Massachusetts Avenue, NE | Washington, DC 20002 | (202) 546-4400 | heritage.org

Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

American interests, a fleet of specialized ships designed to move and navigate in icy waters, known as icebreakers, is required. On November 13, 2024, the United States, Canada, and Finland established the Icebreaker Collaboration Effort (ICE) Pact focusing on information and technology exchanges, workforce development, cooperation with allies and partners, and future initiatives and research and development.⁴ To achieve these objectives, the American government should embrace the ICE Pact's tools to resolve unacceptable U.S. icebreaker fleet size and obsolescence concerns. Pairing allied industrial expertise, infrastructure, and capital with American demand, capital, and scale through the ICE Pact will best address this critical vulnerability for American economic, scientific, and security interests.

State of Play in the Arctic

Leveraging the ICE Pact for strategic success will require understanding the major players' current positions in the Arctic and Antarctic. The former is largely shaped by Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the U.S.—which comprise the Arctic Council, each holding Arctic territory. While the Arctic Council excludes security matters, the relationship between Russia and the remaining permanent members has spiraled in recent years as a result of the Ukraine war and the addition of Finland and Sweden to the North Atlantic Treaty Organization (NATO). Their NATO membership assures additional access in the Arctic and Baltic. It has also elevated concerns about Russian ambitions in the Arctic.

Russia has intentionally sought to counter NATO's growing involvement in the Arctic. In late October, Norway's Minister of Defense Tore Sandvik confirmed this, noting Oslo's observations concerning Russian activity off the Kola Peninsula—including submarine, warship, and naval aircraft movement near Norway.⁵ Such activity is especially notable if Moscow intends to sever NATO Allies' access to the surrounding seas and trade routes. Even worse, over the past two decades, Russia's Arctic investment has far outpaced NATO's, with Russia expanding its Arctic military bases to outnumber NATO's by more than 30 percent.⁶

Similarly, Chinese activity is increasingly shaping the Arctic security landscape. Though China is not an Arctic nation, it justifies its presence through the self-appointed title of a "near-Arctic power" despite the highest Chinese latitude being no more northerly than Hamburg or Rotterdam. This pride has driven Beijing to pursue the first fully modern shipping route from China to Europe via the Northern Sea Route (NSR). In late September, a container ship departed from China's Ningbo-Zhoushan port bound for

Felixstowe in southeast England. The use of the NSR by adversarial states like China and Russia raises serious concerns about undermining Western and NATO access and influence in the region. It also opens the door to resource exploitation and expanded military projection in the Arctic.

Risks posed by Russian and Chinese designs in the Arctic and Antarctic can be mitigated to some degree simply by additional presence. While limited in their combat utility, icebreakers are essential to this mission. However, the U.S. lacks sufficient capability, with only a handful of operational icebreakers, including the two currently in the Arctic.⁷ Overall, U.S. and NATO icebreakers and ice-capable patrol ships amount to 47 vessels, against Russia's fleet of 57 vessels⁸—eight of which are nuclear-powered for enhanced endurance.⁹ Meanwhile, China currently operates five icebreakers in the Arctic.¹⁰

Economic Interests in the Arctic

The Arctic's vast economic potential is a driving factor behind icebreaker build-ups likely to underpin national fleets for decades. (See the oldest operating icebreakers in the ICE Pact nation's fleets: USCG *Polar Star* commissioned in 1976,¹¹ CCGS *Louis S. St-Laurent* launched in 1968,¹² and the *Voima* rebuilt from 1978 to 1979.¹³) Alaska is home to America's primary Arctic economic potential with plentiful fuel and mineral resources. Alaska is already a large energy producer with average oil production of 421,000 barrels a day in 2024,¹⁴ but the 2008 Circum-Arctic Resource Appraisal estimated "approximately 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids"¹⁵ undiscovered in the Arctic. Arctic Alaska is a key production region as "approximately 84 percent of the undiscovered oil and gas occurs offshore."¹⁶ These resources' relevance is enhanced by U.S. Bureau of Ocean Energy Management (BOEM) efforts to develop the 11th National Outer Continental Shelf Oil and Gas Leasing Program with a High Arctic planning area.¹⁷ Rare earth minerals also appear in Alaska's Arctic territory which contains cobalt-rich ferromanganese crusts with "potentially large deposits of cobalt, nickel and rare-earth elements."¹⁸

Long choked by multiyear ice sheets, the Northwest Passage has seen commercial traffic well above the historical norm since 2022.¹⁹ Increasing amounts of the Northwest Passage have been ice free, but significant ice continues to limit passage through chokepoints near Victoria Island.²⁰ Given that "[a] thawed passage is not necessarily an iceless passage"²¹ researchers surmised that the Northwest Passage could become more efficient than

the Suez Canal in the medium term for Asia-to-Europe transits within the context of “cleaned channels by coastal countries’ icebreakers at no-cost.”²² Unexpected disruptions²³ and turbulent geopolitics²⁴ have also underlined the value that alternative routes can provide.²⁵ Meanwhile, Canada’s Arctic base expansion may increase national security access and create supporting infrastructure for the Passage.²⁶

Changing Ambitions in the Antarctic

The present consensus in Antarctica, by contrast, emphasizes peaceful science to prevent sovereignty disputes. In December 1959, the United States brought 12 countries together to sign the Antarctic Treaty agreeing to the overriding principle enshrined in Article 1: “Antarctica shall be used for peaceful purposes only.”²⁷ Article 4 of the Antarctic Treaty confirmed: “No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica.”²⁸ The Protocol on Environmental Protection to the Antarctic Treaty, the Convention for the Conservation of Antarctic Seals, and the Convention on the Conservation of Antarctic Marine Living Resources, all ratified by the United States, together form the Antarctic Treaty System.

Still, significant economic interests are embedded within this system. Scientists estimate that fisheries controls in Antarctic waters return annual worldwide economic benefits of \$180 billion a year.²⁹ Beyond Antarctic tourism, these benefits are largely due to the Antarctic Circumpolar Current distributing krill, a foundational piece of ocean food chains, around the globe.³⁰

American policy since the first Reagan Administration has been to maintain Antarctic presence to accomplish U.S. scientific exploration and resource-management strategic objectives while freezing Antarctic territorial claims.³¹ To this day, authorization for the U.S. Antarctic Program traces back to President Ronald Reagan’s Presidential Memorandum 6646 directing an American presence in Antarctica, under the National Science Foundation, at the South Pole and two coastal locations. This presence remains in place today at Amundsen-Scott South Pole Station, McMurdo Station, and Palmer Station.³²

President Bill Clinton reaffirmed these strategic objectives in his Presidential Decision Directive (PDD) 26, which noted goals including preservation of the Antarctic environment, pursuing scientific research, maintaining Antarctica’s peaceful status, and assuring conservation in the

Antarctic oceans.³³ President Donald Trump maintained this approach in his “Memorandum on Safeguarding U.S. National Interests in the Arctic and Antarctic Regions,” which referenced “the ability to provide a persistent United States presence in the Antarctic region, as appropriate, in accordance with the Antarctic Treaty System.”³⁴ Bipartisan unity prevailed when President Joe Biden’s National Security Memorandum 23 replaced President Clinton’s PDD 26 but maintained its strategic objectives and situated American strategy within the Antarctic Treaty System as President Trump had done.³⁵

The extensive historical foundations of American presence display the reasons why icebreakers are an essential capability. Antarctica’s climate is the harshest on Earth, and year-round stations require external resupply. McMurdo Research Station is the hub for American presence due to its position on the Antarctic coast and its size. The primary resupply of McMurdo is the USCG *Polar Star*’s annual transit which breaks a channel for a cargo ship and (every other year) a tanker. These transits deliver 10 million to 12 million pounds of cargo annually, with 8 million gallons of fuel offloaded every other year. These resources are then distributed across Antarctica. Without an icebreaker, resupply is impossible.³⁶

Finally, icebreakers underpin America’s ability to conduct unannounced inspections of Antarctic research stations to ensure that no militarization is occurring. Chinese and Russian ambitions extend to the South Pole where they maintain, respectively, three and five permanent research bases, three and five seasonal bases,³⁷ and likely operate several icebreakers.³⁸ Persistent suspicions among U.S. allies about the intent of Russian and Chinese “research” missions signal potential challenges to the Antarctic Treaty and heighten concerns over adversarial ambitions for resource exploitation and military projection in the South Pole—particularly with the increased use of dual-use technologies.³⁹ Yet, with decreased capacity, the last inspections into militarization were those conducted in February 2020, once again demonstrating both the utility of and need for icebreakers.⁴⁰

The ICE Pact’s Offer and Opportunity

Over its first year, the ICE Pact has facilitated industrial expansion and icebreaker orders. Among other steps, major icebreaker shipbuilder Davie Shipyards announced its intention to acquire facilities in Galveston and Port Arthur, Texas, from Gulf Copper & Manufacturing Corporation.⁴¹ Lately, Davie announced the manufacturing facility it plans to build once icebreaker contracts are signed.⁴² Icebreaker shipyard interest has emerged

not just on the back of the ICE Pact memorandum, but on specific steps like the purchase of the Aiviq⁴³ and the One Big Beautiful Bill's (OBBB's) multi-billion dollar investments in icebreakers including Polar Security Cutters, Arctic Security Cutters (ASCs), and other light and medium icebreakers.⁴⁴

However, the industrial output differential between U.S. and foreign shipyards makes evident the need to derive and apply key production and workforce lessons. Shipbuilders in Finland and Canada, for example, operate on much faster timetables, supported by concentrated supply chains and highly specialized labor forces. Finland's Helsinki Shipyard—responsible for more than 50 percent of the global icebreaker fleet over the past quarter-century⁴⁵—can deliver a new vessel within just 24 months of contracting, roughly five times faster than U.S. shipyards.⁴⁶ Much of this success is attributed to a concentration of maritime companies in southern Finland that design and supply propulsion, engines, and specialized systems to nearby yards.⁴⁷ For instance, Rauma Marine Constructions—one of Finnish shipbuilding's significant players—states that the majority of their supply chain is located within 150 kilometers, a lesson the U.S. should examine.⁴⁸

President Trump has focused on the ICE Pact to restore America's icebreaking fleet in his second term, with implementation underway. In March 2025, the three countries' National Coordinators met in Helsinki to advance the ICE Pact work plan, focusing on the four pillars.⁴⁹ But until domestic capacity matures, the U.S. must depend on Finland and Canada—while urgently adopting their efficiency and specialization lessons at home. Finland is central to this, as reflected in President Trump's initial post-re-election conversation with Finnish President Alexander Stubb when ICE Pact was discussed.⁵⁰ These positive interactions created momentum for the early October 2025 memorandum signed between the United States and Finland to purchase ASCs from Finnish shipyards⁵¹ courtesy of a national security waiver from President Trump.⁵² Consistent with the Trump Administration's push to restore America's maritime dominance,⁵³ the effort will begin with partner shipyards in Finland before the construction of seven ASCs in American shipyards in Texas and Louisiana.⁵⁴ With executive branch approvals in order, it now falls to Congress to ensure that funds are authorized and appropriated so that icebreakers are constructed.

Recommendations for the Coast Guard, Congress, and the Department of Commerce

In order to realize the promise of the ICE Pact, the U.S. Coast Guard should:

- **Obligate the icebreaker funds made available in the OBBB.** Using OBBB icebreaker funds,⁵⁵ the Coast Guard should contract for the purchase of the first four Arctic Security Cutters with firm design commitments no later than June 2026. In parallel, the Coast Guard should sign a contract with American shipyards for additional icebreaker construction.
- **Explore, through the Department of Homeland Security, a joint project with the Canadian Coast Guard to comprehensively map the Northwest Passage.** Though there are conflicting legal understandings of sovereignty in parts of the Arctic between the United States and Canada, that has not stopped cooperation. As the Northwest Passage is freeing up from ice, a joint comprehensive mapping of Northwest Passage waterways would reduce maritime industry navigability concerns, especially as Russia and China use the NSR.

Congress should:

- **Hold hearings to review Arctic and Antarctic naval and Coast Guard operations.** To avoid a hollow capability problem, Congress should hold hearings to determine basing, repair, and sustainment requirements for an expanded icebreaker fleet and clarify their operational priorities in support of broader U.S. maritime objectives (military, economic, and scientific) in the poles.

The Department of Commerce should:

- **Facilitate a private transatlantic business forum by June 2026 in connection with the Maritime Action Plan.** This forum should aim to gather relevant industrial partners from the ICE Pact nations with government officials to clarify next steps on shared goals: implementing modern production techniques across allied shipyards, structuring the Workforce Exchange Program with the U.S., framing a Trusted Suppliers List for subcontractors and components, and resolving lingering defense export controls concerns.

Jordan Embree is Research Associate in the Margaret Thatcher Center for Freedom at The Heritage Foundation. Anna Gustafson is Research Assistant in the Douglas and Sarah the Allison Center for National Security at The Heritage Foundation.

Endnotes

1. News release, "U.S. Coast Guard Cutter Polar Star's Crew Concludes Operation Deep Freeze 2025 Mission, Departs Antarctica," U.S. Coast Guard, March 6, 2025, <https://www.news.uscg.mil/Press-Releases/article/4112057/us-coast-guard-cutter-polar-stars-crew-concludes-operation-deep-freeze-2025-mis/> (accessed October 27, 2025).
2. Malte Humpert, "China Launches 18-Day Arctic Express Containership Route to Europe with Stops in UK, Germany, Poland," *High North News*, August 18, 2025, <https://www.highnorthnews.com/en/china-launches-18-day-arctic-express-containership-route-europe-stops-uk-germany-poland> (accessed October 27, 2025).
3. Matthew P. Funaiolo et al., "China Makes Progress on Its Fifth Antarctic Research Station," Center for Strategic and International Studies, December 19, 2024, <https://www.csis.org/analysis/china-makes-progress-its-fifth-antarctic-research-station> (accessed October 27, 2025).
4. U.S. Department of Homeland Security, "Memorandum of Understanding Among the Government of Canada, the Government of the Republic of Finland, and the Government of the United States of America Regarding a Trilateral Framework for the Production of Arctic and Polar Icebreakers and other Capabilities," November 13, 2024, https://www.dhs.gov/sites/default/files/2024-12/24_1113_src_signed-mou-icebreaker-pact-508.pdf (accessed October 27, 2025).
5. James Rothwell, "Russia Massing Nuclear Fleet in Arctic Circle 'for War with Nato,'" *The Telegraph*, October 24, 2025, <https://www.telegraph.co.uk/world-news/2025/10/24/russia-massing-nuclear-fleet-in-arctic-circle-war-with-nato/?msockid=20bb239b15ca6fe32f4d35fe14d76e8a> (accessed October 27, 2025).
6. Jacob Gronholt-Pederson and Gwladys Fouche, "Dark Arctic–NATO Allies Wake Up to Russian Supremacy in the Region," Reuters, October 28, 2025, <https://www.reuters.com/graphics/ARCTIC-SECURITY/zgvobmbmlrpd/> (accessed October 27, 2025).
7. Malte Humpert, "US Coast Guard Operates Two Polar Icebreakers in Arctic Simultaneously for First Time in More Than a Decade," gCaptain, August 25, 2025, <https://gcaptain.com/us-coast-guard-operates-two-polar-icebreakers-in-arctic-simultaneously-for-first-time-in-more-than-a-decade/> (accessed October 27, 2025).
8. Gronholt-Pederson and Fouche, "Dark Arctic–NATO Allies Wake Up to Russian Supremacy in the Region."
9. "Russia's Icebreaker Fleet Set to Grow," World Nuclear News, April 1, 2025, <https://www.world-nuclear-news.org/articles/russias-icebreaker-fleet-set-to-grow> (accessed November 6, 2025).
10. Malte Humpert, "China Deploys Five Icebreakers Near Alaska in Unprecedented Arctic Move," gCaptain, August 7, 2025, <https://gcaptain.com/china-deploys-five-icebreakers-near-alaska-in-unprecedented-arctic-move/> (accessed October 27, 2025).
11. U.S. Coast Guard–Pacific Area, "USCGC Polar Star (WAGB 10)," <https://www.pacificarea.uscg.mil/Our-Organization/Cutters/cgcPolarStar/> (accessed October 27, 2025).
12. Canadian Coast Guard, "CCG Fleet: Vessel Details–CCGS Louis S. St-Laurent," <https://inter-j02.dfo-mpo.gc.ca/fdat/vessels/vessel-details/81> (accessed October 27, 2025).
13. "Finland Awarded €91M from EU for New Icebreaker and Transport Projects," *Maritime Executive*, July 7, 2025, <https://maritime-executive.com/article/finland-awarded-91m-from-eu-for-new-icebreaker-and-transport-projects> (accessed October 23, 2025).
14. U.S. Energy Information Administration, "Alaska–State Profile and Energy Estimates," May 2025, <https://www.eia.gov/state/?sid=AK#:~:text=Quick%20Facts,2024%2D%2Dgenerated%20from%20petroleum> (accessed October 27, 2025).
15. U.S. Geological Survey, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," 2008, p. 4, <https://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf> (accessed October 27, 2025).
16. Ibid.
17. U.S. Bureau of Ocean Energy Management, "National OCS Oil and Gas Leasing Program," <https://www.boem.gov/oil-gas-energy/national-program/national-ocs-oil-and-gas-leasing-program> (accessed October 27, 2025).
18. U.S. Bureau of Ocean Energy Management, "Critical Minerals on the Alaska OCS," <https://www.boem.gov/marine-minerals/critical-minerals/critical-minerals-alaska-ocs#inalaska> (accessed October 27, 2025).
19. Robert Headland et al., "Northwest Passage Transits to End of the 2025 Navigation Season Atlantic Ocean ↔ Arctic Ocean ↔ Pacific Ocean," University of Cambridge Scott Polar Research Institute, October 2025, p. 17, <https://www.spri.cam.ac.uk/resources/infosheets/northwestpassage.pdf> (accessed October 27, 2025).
20. U.S. National Aeronautics and Space Administration–Earth Observatory, "Sea Ice Chokes the Northwest Passage," July 13, 2024, <https://earthobservatory.nasa.gov/images/153166/sea-ice-chokes-the-northwest-passage> (accessed October 27, 2025).
21. Brian Smith, "The Thawing of the Northwest Passage and Its Potential Implications for Ocean Shipping," ResearchGate, October 2021, p. 14, https://www.researchgate.net/publication/358346667_The_Thawing_of_the_Northwest_Passage_and_Its_Potential_Implications_for_Ocean_Shipping (accessed October 27, 2025).

22. Saim Turgut Koçak and Funda Yercan, "Comparative Cost-Effectiveness Analysis of Arctic and International Shipping Routes: A Fuzzy Analytic Hierarchy Process," *Transport Policy*, Vol. 114 (December 2021), pp. 147–164, <https://www.sciencedirect.com/science/article/abs/pii/S0967070X21002547> (accessed October 27, 2025).
23. U.S. Bureau of Transportation, "U.S. Trade and the Impact of Low Water Levels in Gatun Lake and the Panama Canal," December 2024, <https://www.bts.gov/data-spotlight/us-trade-and-impact-low-water-levels-gatun-lake-and-panama-canal> (accessed October 27, 2025), and Mary-Ann Russon, "The Cost of the Suez Canal Blockage," BBC, March 29, 2021, <https://www.bbc.com/news/business-56559073> (accessed October 27, 2025).
24. Aaron McMillan, "How the Shipping Crisis in the Red Sea Is Impacting Trade," *Procurement Magazine*, March 17, 2025, <https://procurementmag.com/supply-chain-management/red-sea-disruption-trade> (accessed October 23, 2025).
25. Ibid.
26. Nick Murray, "Canada Will Build 3 Arctic Military Hubs as It Ramps Up Regional Footprint," *The Canadian Press*, March 6, 2025, <https://globalnews.ca/news/11070043/arctic-military-support-hubs-canada/> (accessed October 27, 2025).
27. Conference on Antarctica, The Antarctic Treaty, Article 1, December 1, 1959, https://documents.ats.aq/ats/treaty_original.pdf (accessed October 27, 2025).
28. Ibid., Article 4.
29. Rachel Baird and Natalie Stoeckl, "Antarctica Provides at Least \$276 Billion a Year in Economic Benefits to the World," *Polar Journal*, March 4, 2024, <https://polarjournal.net/antarctica-provides-at-least-276-billion-a-year-in-economic-benefits-to-the-world/#:~:text=All%20up%2C%20this%20brings%20the,ounting%20with%20other%20regulating%20services> (accessed October 27, 2025).
30. Ibid.
31. Lieutenant Commander Clarence O. Fiske and Mrs. Clarence O. Fiske, "Territorial Claims in the Antarctic," *United States Naval Institute Proceedings*, Vol. 85, No. 3 (January 1959), <https://www.usni.org/magazines/proceedings/1959/january/territorial-claims-antarctic> (accessed October 27, 2025).
32. The White House, "Presidential Memorandum 6646—Regarding Antarctica," February 5, 1982, <https://www.nsf.gov/geo/opp/ant/presidential-memorandum-6646> (accessed October 27, 2025).
33. The White House, "United States Policy on the Arctic and Antarctic Regions," Presidential Decision Directive/NSC-26, June 9, 1994, <https://irp.fas.org/offdocs/pdd/pdd-26.pdf> (accessed October 27, 2025).
34. The White House, "Memorandum on Safeguarding U.S. National Interests in the Arctic and Antarctic Regions," June 9, 2020, <https://trumpwhitehouse.archives.gov/presidential-actions/memorandum-safeguarding-u-s-national-interests-arctic-antarctic-regions/#:~:text=To%20help%20protect%20our%20national,National%20Defense%20Strategy%2C%20as%20appropriate> (accessed October 27, 2025).
35. The White House, "National Security Memorandum on United States Policy on the Antarctic Region," May 17, 2024, <https://bidenwhitehouse.archives.gov/briefing-room/presidential-actions/2024/05/17/national-security-memorandum-on-united-states-policy-on-the-antarctic-region/> (accessed October 27, 2025).
36. U.S. National Science Foundation—Office of Polar Programs, "Science on the Ice: The United States Antarctic Program," 2022, pp. 22–24, <https://nsf.gov/resources/nsf.gov/files/NSF-Science-on-the-Ice-fifth-edition.pdf?VersionId=JQe9TIAzQtb6av4tGqa5DCeTnhWBhRdh> (accessed October 27, 2025).
37. Brendan Cole and John Feng, "Map Shows Where China and Russia Are Expanding Bases in Antarctica," *Newsweek*, July 31, 2025, <https://www.newsweek.com/russia-china-antarctica-map-2106796> (accessed November 6, 2025).
38. Gareth Havelock, "Icebreakers Depart on China's 42nd Antarctic Expedition," Baird Maritime, November 3, 2025, <https://www.bairdmaritime.com/work-boat-world/research-environment-training/icebreakers-depart-on-chinas-42nd-antarctic-expedition> (accessed November 7, 2025).
39. Cole and Feng, "Map Shows Where China and Russia Are Expanding Bases in Antarctica."
40. News release, "United States Conducts Inspections in Antarctica," U.S. Department of State, February 12, 2020, <https://2017-2021.state.gov/united-states-conducts-inspections-in-antarctica/> (accessed October 27, 2025).
41. Paul Berger and Daniel Michaels, "Texas Shipyard Deal Would Bring Arctic Icebreakers Trump Seeks," *The Wall Street Journal*, June 11, 2025, https://www.wsj.com/articles/texas-shipyard-deal-would-bring-arctic-icebreakers-trump-seeks-7d9b6c8e?gaa_at=eafs&gaa_n=AWEtseqeLyR67QfrtNcsABqcdnY65T5kd8JslcKFreUXcpRxOXKSivFoOkVjg&gaa_ts=68f18157&gaa_sig=97CZkXSdfaJlZyB83rnCzwKlyeWV4zeybLQdGLRnC7dkGlpAICywWFoyf6FdxERSHxjcr-GtOjzscr9A2aBWQ%3D%3D (accessed October 27, 2025).
42. Nick Blenkey, "Davie Defense Unveils Plans for Its \$1Bn American Icebreaker Factory," *Marine Log*, September 12, 2025, [https://www.marinelog.com/news/davie-defense-unveils-plans-for-its-lbn-american-icebreaker-factory/#:~:text=at%20Philly%20Shipyard-,Davie%20Defense%20unveils%20plans%20for%20its%20\\$1Bn%20American%20Icebreaker,Austal%20USA%20and%20Fincantieri%20Marinette](https://www.marinelog.com/news/davie-defense-unveils-plans-for-its-lbn-american-icebreaker-factory/#:~:text=at%20Philly%20Shipyard-,Davie%20Defense%20unveils%20plans%20for%20its%20$1Bn%20American%20Icebreaker,Austal%20USA%20and%20Fincantieri%20Marinette) (accessed October 27, 2025).
43. News release, "Coast Guard Accepts Ownership of Commercially Available Polar Icebreaker," U.S. Coast Guard, December 30, 2024, <https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Newsroom/Latest-Acquisition-News/Article/4017822/coast-guard-accepts-ownership-of-commercially-available-polar-icebreaker/> (accessed October 27, 2025).
44. News release, "U.S. Coast Guard Receives Historic Investment to Rebuild Under President Trump's One Big Beautiful Bill," U.S. Coast Guard, July 4, 2025, <https://www.news.uscg.mil/Press-Releases/Article/4235481/us-coast-guard-receives-historic-investment-to-rebuild-under-president-trumps-o/> (accessed October 27, 2025).

45. News release, "Davie Plans to Play a Key Role in Support of Historic Partnership Between Finland, Canada and the United States to Build Icebreakers," Davie, July 11, 2024, <https://helsinkishipyards.fi/wp-content/uploads/2024/07/2024-07-11-ICE-Pact-NR-EN-Final.pdf> (accessed November 6, 2025).
46. Jason C. Moyer and Rickard Lindholm, "Icebreaking Explained—Finland: Europe's Icebreaker Superpower," Wilson Center, November 12, 2024 <https://www.wilsoncenter.org/article/icebreaking-explained-finland-europes-icebreaker-superpower> (accessed November 6, 2025).
47. Organization for Economic Co-operation and Development, "Peer Review of the Finnish Shipbuilding Industry," 2018, https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/02/peer-review-of-the-finnish-shipbuilding-industry_16618201/26cbb97f-en.pdf (accessed October 27, 2025).
48. Rauma Marine Constructions, "RMC Collaborates with Its Client to Build Car and Passenger Ferries for Tasmania's Challenging Sea Conditions," September 17, 2024, <https://rmcfinland.fi/rmc-collaborates-with-its-client-to-build-car-and-passenger-ferries-for-tasmanias-challenging-sea-conditions> (accessed October 27, 2025).
49. News release, "National Coordinators Advance Work on Icebreaker Collaboration Effort," Finland Abroad, June 13, 2025, https://finlandabroad.fi/web/usa/current-affairs/-/asset_publisher/h5w4iUJhNne/content/ice-pact-jaanmurtajayhteistyon-kansalliset-koordinaattorit-edistivat-yhteistyota/35732?utm_source=chatgpt.com (accessed October 27, 2025).
50. News release, "President Stubb Speaks with President-elect of the United States Donald Trump," Office of the President of the Republic of Finland, November 11, 2024, <https://www.presidentti.fi/en/president-stubb-speaks-with-president-elect-of-the-united-states-donald-trump/> (accessed October 27, 2025).
51. News release, "DHS Celebrates Purchase of New Coast Guard Icebreakers as President Trump Signs Deal with Finland," U.S. Department of Homeland Security, October 10, 2025, <https://www.dhs.gov/news/2025/10/10/dhs-celebrates-purchase-new-coast-guard-icebreakers-president-trump-signs-deal#:~:text=Thursday%27s%20MOU%20is%20the%20latest,combining%20their%20collective%20knowledge%2C%20resources%2C> (accessed October 27, 2025).
52. The White House, "Construction of Arctic Security Cutters," presidential memorandum, October 8, 2025, <https://www.whitehouse.gov/presidential-actions/2025/10/construction-of-arctic-security-cutters/> (accessed October 27, 2025).
53. The White House, "Restoring America's Maritime Dominance," executive order, April 9, 2025, <https://www.whitehouse.gov/presidential-actions/2025/04/restoring-americas-maritime-dominance/> (accessed October 27, 2025).
54. Justin Katz, "White House, Finland Sign Deal for Four Icebreakers," *Breaking Defense*, October 9, 2025, <https://breakingdefense.com/2025/10/white-house-finland-to-sign-deal-for-4-icebreakers/> (accessed October 27, 2025).
55. News release, "Sullivan Shapes 'One Big Beautiful Bill' to Unleash Alaska's Economy, Create Good-Paying Jobs, Provide Historic Tax Cuts for Working Families, and Strengthen Health Care," U.S. Senator Dan Sullivan, July 1, 2025, <https://www.sullivan.senate.gov/newsroom/press-releases/sullivan-shapes-one-big-beautiful-bill-to-unleash-alaskas-economy-create-good-paying-jobs-provide-historic-tax-cuts-for-working-families-and-strengthen-health-care> (accessed October 27, 2025).