

The Greely Relief Expedition and the New Navy

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On July 10, 1881, U.S. Army First Lieutenant Adolphus W. Greely sailed north in command of a small polar expedition. After making an unexpectedly easy passage, the expedition settled into a well-supplied base they named Fort Conger and began their mission of scientific exploration and astronomical observation. After that, everything went wrong. Thick ice prevented the scheduled resupply missions from reaching them. Greely and his men were stranded, and after two years faced starvation. After much debate, President Chester Arthur sent the Navy to rescue them.

This attempt to rescue Greely took place at a unique turning point in the history of the U.S. Navy. Seriously under funded, the Navy had deteriorated markedly since the Civil War. Much of the fleet was obsolete and some ships were so unseaworthy that they rarely left port. Many observers considered their officers and crew equally unsuited to the rigors of the sea. Throughout the previous decade, the press had routinely ridiculed the Navy and its aging warships, which seemed to regularly run aground or collide with civilian ships. The Navy's record in Arctic exploration was particularly poor and offered

little hope for a successful rescue effort. In an article chronicling the Navy's numerous Arctic failures, *The New York Time* predicted that any Navy effort to rescue Greely would end in disaster. Many in Congress agreed, among them Representative James Herbert Budd (D-CA) who warned that the same "drawing room sailors" who led previous naval expeditions to ruin would command this one, and likely produce similar results. Even Senator John D. Long (R-MA), one of the Navy's advocates, lamented that the American people laughed "at our naval array as a sort of Falstaffian burlesque."¹

In 1883, Congress appropriated funds for the first new warships in more than a decade, the famous ABCD's (*Atlanta, Boston, Chicago, and Dolphin*), but the fragile consensus for naval modernization collapsed the following year. Congressional debate over naval funding became increasingly bitter and partisan as each party blamed the other for the Navy's decline. Rumors of construction problems and corruption with the ABCDs added fuel to the acrimonious debate. At perhaps its lowest points, Representative Charles N. Brumm (R-PA) accused the Democrats of fraud and corruption and claimed that they had robbed the nation of an "Army, Navy, and all that they could lay hands on." At least, responded William M. Springer (D-IL) "we never stole the Presidency."² Congress failed to fund the construction of any new warships that year, and hopes for naval modernization dimmed.

Rescuing Greely presented the Navy with an opportunity to refute this negative press and rehabilitate its reputation. Further, a successful rescue would fuel the efforts of a growing number of reform-minded officers to modernize the Navy's administration, infrastructure, and warships. These officers had recently formed new administrative organizations including the Office of Naval Intelligence and the Naval Advisory Board

and the U. S. Naval Institute, a private organization that promoted naval reform, provided a forum to discuss its progress, and helped naval officers lobby Congress. A successful rescue would publicize the transformation of the navy's officer corps, underlining both its competence and the need for continued reform and modernization. It would galvanize support for naval modernization Congress. In the decade before the Navy proved itself in battle against Spain, the Greely Relief Expedition proved one of its most notable and celebrated successes. It also occupied a central place in a determined public relations campaign by progressive naval officers to modernize the Navy.

Arctic Exploration

Exploration had long been an important role for the U. S. Navy, which dispatched expeditions to explore Africa, Antarctica, the Middle East, and the Arctic during the 19th century. While hopes of finding a Northwest Passage faded, interest in exploration remained in the Navy and particularly in Congress, which dispatched several exploratory expeditions. The U. S. Navy had lost several ships in expeditions to the Arctic, most recently Commander George W. DeLong's steamer *Jeannette*. Trapped by a sudden advance of the ice, the *Jeannette's* crew struggled to break free for twenty-one months without success. Ice crushed the ship on June 12, 1881. Only a third of the crew, led by Chief Engineer George Melville, survived the journey over ice and then freezing water and returned home. A Senate investigation later condemned the *Jeannette* as unsuited for the Arctic and faulted the Navy for sending her north. The Navy had dispatched the *Jeannette* to the Arctic at the urging of influential members of Congress and Arctic enthusiast and *New York Herald* publisher James Gordon Bennett, who donated the ship.

The failure soured the Navy's leadership on Arctic exploration.³

Other nations also launched Arctic expeditions that met with varying degrees of success. Austrian explorer Karl Weyprecht persuaded the governments of ten nations to cooperate in conducting various scientific studies, observations, and explorations from a ring of stations circling the North Pole. The United States agreed to place and staff two of these: one at Point Barrow, Alaska, the other on Ellesmere Island, an isolated spot northwest of Greenland, along the northern segment of Lady Franklin Bay. With the Navy reluctant, the Weather Bureau, one of the broad array of agencies directed by the Chief Signal Officer of the Army, organized both expeditions. The Point Barrow expedition, commanded by Lieutenant P. Henry Ray, completed its two year assignment and returned in August, 1883. The Lady Franklin Bay expedition did not fare as well.⁴

The Greely Expedition

Chief Signal Officer General William B. Hazen chose Lieutenant Greely, a Signal Corps officer with extensive experience in the American northwest, to lead the expedition of nineteen soldiers, three other officers, and a civilian doctor to Lady Franklin Bay. On June 25, 1881, the expedition left St. Johns, Newfoundland aboard the whaler *Proteus*. They carried supplies for a two-year stay, and Hazen scheduled ships to bring additional supplies in the summers of 1882 and 1883. Yet, he gave Greely very specific orders. If the 1883 supply ship failed to reach them, the expedition would “abandon station not

later than September 1, 1883” and “retreat southward by boat, following closely the east coast of Grinnell Land [an island west of Greenland], until the relieving vessel is met or Littleton Island is reached.”⁵ If the supply ships could not reach Fort Conger, they would cache supplies for Greely’s expedition on Littleton Island before advancing ice forced them to withdraw. In this circumstance, Hazen’s orders committed the Greely Expedition to a dangerous journey of uncertain duration over the ice.

The *Proteus* made an unexpectedly easy passage north and helped Greely’s party establish their Fort Conger base near a coal seam on August 12. Greely’s team, including two Inuit guides they hired in Greenland, began its work. The 1882 supply ship, the *Neptune*, failed to find a passage through the ice and instead cached supplies for Greely at several sites far to the south. Greely’s expedition, though, remained in good health and well supplied thanks to successful hunting and the nearby coal seam.

The following year, Army Lieutenant Edward A. Garlington commanded a more determined effort to reach Greely. Garlington again hired the *Proteus*, captained by Richard Pike, and accompanied by the *Yantic*, an old, wooden Navy steamer, proceeded north. The *Yantic* lacked both the engine power and hull strength to enter the ice pack and left the *Proteus* to proceed alone when they reached dangerous waters. On July 23, a sudden advance of the ice trapped and crushed the *Proteus* in the Kane Sea. Her undisciplined crew rushed to save their personal possessions and abandoned ship. Most of the supplies for Greely’s expedition went down with the ship. After, Pike, Garlington, and Garlington’s naval advisor, Lieutenant John C. Colwell, regained control of the crew, they cached what few stores they salvaged, and then rowed south across Melville Bay in small boats. The *Yantic* rescued them after a prolonged search, and then sailed home.

Obedient to his orders, Greely gathered his men and began moving south on August 10, abandoning a well-supplied base for a dangerous journey on foot and in small boats through hundreds of miles of Arctic wilderness.⁶

Greely and his men made good time at first, but a storm on the 26th drove their boats into the ice pack. Afterward, they made halting progress, moving where wind and tide and openings in the ice allowed them, often drifting on ice floes. Along the way, they lost their steam launch, and one of their guides died when ice ripped open his kayak. They reached Cape Sabine by the end of September. Greely sent out a small party, which found some of the cached supplies from the *Proteus*, but they were hopelessly inadequate to sustain twenty-six men for long. A second search for supplies left one man dead and another crippled by frozen hands and feet. Exhausted and having lost most of their supplies and equipment on their trek, Greely determined that they had no choice but to camp on Cape Sabine. They would await rescue and sustain themselves as best they could by hunting and fishing. The result would be slow starvation.⁷

The Relief Expedition

After much inter-service wrangling and the inconclusive deliberations of a joint Army-Navy board, reform-minded naval officers persuaded President Arthur to send an exclusively naval expedition to rescue Greely. Commander Winfield Scott Schley, the personal choice of Secretary of the Navy William Chandler, would lead the expedition. An officer of wide experience, Schley had served in the Civil War and helped lead an 1871 assault on two Korean forts. He had a reputation for bold leadership, and as a charter member of the United States Naval Institute and former Naval Academy

instructor, was well acquainted with other reform-minded officers, especially the so called Young Turks—vocal young officers determined to modernize the Navy.

The Navy still lacked ships suited for Arctic exploration. While the Senate debated funding the expedition, Chandler approved the purchase of two Dundee-built whalers, the *Thetis* and the *Bear*. Lieutenant Commander French Ensor Chadwick, the Office of Naval Intelligence's attaché in Britain, arranged the sale. Eager to improve its relations with the United States, the British government donated the *Alert*, a veteran of George Nares' 1875 Arctic expedition.

Schley selected the 24 officers and 91 crew members of his three-ship expedition with care. All were volunteers and passed a rigorous medical exam. Schley knew many of them personally, and he chose some of the Navy's most promising and reform-minded officers including Lieutenants Uriel Sebree and John C. Colwell, Ensigns Albert A. Ackerman and Washington I. Chambers, and Engineers John T. Lowe and George Melville. Melville had extensive experience in the Arctic and had survived the destruction of both the *Jeannette* and the *Polaris* in Arctic expeditions. Seven of the expedition's other officers also had Arctic or Antarctic experience. Schley assigned at least one of them to each ship along with an experienced civilian ice-master. Schley commanded the squadron from the *Thetis*, the strongest and most powerful of the expedition's ships. Commander George Coffin commanded the *Alert* and Lieutenant William Emory commanded the *Bear*.

The expedition attracted considerable press attention, and reporters watched as its members and New York Navy Yard crews rushed to prepare the three ships, tearing out compartments to make room for supplies, overhauling their engines, and adding

additional bracing to their hulls. Schley stocked the ships for a long expedition, and his officers procured or cobbled together a variety of specialized equipment, including every book on the Arctic they could find. Lieutenant Bradley Fiske at the Bureau of Ordnance designed new ice augers for expedition and helped prepare 600 explosive charges that Schley planned to use to clear passages through the ice.⁸

Schley sent out the ships as they became ready, the *Bear* left first on April 24, and the *Thetis* a week later. Both departed with great fanfare that included floral displays donated by well wishers. On May 9, they rendezvoused at St. John's, Newfoundland with the *Loch Garry*, a British steamer that Schley leased for the expedition to carry coal, because the U. S. Navy did not have a single collier. An ordinary iron steamer, the *Loch Garry* was unsuited for an Arctic voyage. Unable to insure the ship and worried that its civilian crew might have a change of heart and abandon his expedition, Schley sent aboard Ensign Chambers as supercargo along with two sailors. Chambers shared command with the ship's captain, Robert Jones, who was an experienced ice navigator.⁹

Schley ordered the *Bear* to press northward while he and the *Thetis* remained in St. John's to gather supplies, which proved plentiful, and information, which did not. The *Thetis* and *Loch Garry* left St. John's on May 12, the *Loch Garry* following three cable lengths behind. A thick fog engulfed them as soon as they cleared the harbor, and the weather worsened through the day, turning to gale. Lookouts spotted floating blocks of ice, and soon both ships had to skirt the iceberg from which these had detached. The rough weather continued through the morning of May 22 when both ships arrived at the harbor ice of Godhavn. The crews encountered difficulty anchoring in ice for the first time, and afterward Schley and Chambers had them practice, so that they could anchor in

the ice in about three minutes, a necessary skill if they were to survive.¹⁰

The *Thetis* and *Loch Garry* departed on the 24th, bound for Upernivik, having been delayed by a gale that packed the harbor with ice. Off Hare Island, advancing ice caught the *Thetis*. The *Loch Garry* tried to pull her off, but the line snapped and she barely avoided being trapped as well. Chambers and Jones backed the *Loch Garry* out of danger and then both ships dispatched parties with ice augers and explosives to clear a path. The two ships then continued on their way until they hit solid ice at the North Fjord. The *Thetis* rammed in about 50 yards and spent the night there. The *Loch Garry* remained safely away. The next morning, a gale almost drove the *Loch Garry* into the ice, and Schley ordered her back to Godhavn to await better weather. The *Thetis* then pushed into the ice pack, a slow and dangerous process. The ice was often ten feet thick and sometimes more than 20 feet thick. Two whalers, the *Wolf* and the *Arctic*, eager to collect the \$25,000 reward that newspapers had pressured the government to offer for Greely's rescue, joined the *Thetis*. Assisting each other through the ice, they made rapid progress.¹¹

The *Loch Garry* caught up with them on the 28th, and cautiously followed in the rear, while the squadron made a difficult passage through the ice, arriving at Upernivik on the 29th. Schley spent twenty hours in the crow's nest guiding his ship while his navigator below, struggled to plot their course on outdated charts that sometimes showed them considerably inland. He later described the passage as "exciting and anxious." At Upernivik, several more whalers joined them, and soon eight of them hovered about Schley's squadron, hoping for a share of the reward. The *Bear* was also there, having arrived on the 27th, and Schley invited the whaler captains to the *Thetis* so that his

officers could learn from their experience.¹²

After re-coaling from the *Loch Garry* and recruiting native guides and dog teams, Schley led his squadron north, leaving the *Loch Garry* to await the arrival of the *Alert*, which arrived two weeks later on the 13th. The whalers soon abandoned the rescue mission to pursue their normal trade. The *Thetis* and *Bear* moved through ice together taking turns leading and helping extract one another when ice closed in. Despite spending several days and nights trapped in ice, they continued to make progress. On June 21, they reached Littleton Island, two weeks earlier in the year than any vessel had previously managed. Finding the supplies cached by the *Neptune* undisturbed, they pressed north the following day. They discovered a cairn marking a deposit of Greely's records with an October 21, 1883 message that his expedition had camped at Cape Sabine with only 40 days of rations. Lieutenant Colwell and a search party from the *Bear* found the survivors the following day, huddled in a collapsed tent, weak, starving, and near death. Greely had ordered one of his men shot for stealing food, and the survivors had resorted to cannibalism in order to survive. Of the original party of twenty-seven, only Greely and six of his men had survived, one of whom died on the voyage home following the amputation of his hands and feet.¹³

The Voyage Home

The *Loch Garry* and the *Alert* had sailed north on June 19, but made slower progress each day until thickening ice finally stopped and trapped them. Returning with Greely and the other survivors, the *Thetis* and *Bear* found them on the 30th and broke them free. United for the first time, the four ships sailed south. All had suffered damage

and were leaking. The *Bear* had five feet of water in the hold, and Emory questioned whether he could get her home. The others were not much better off. Numerous ice bergs blocked their passage and dense fog often reduced their speed to two knots. The ships navigated almost blind, constantly sounding their whistles to avoid running into each other. Each became stuck several times and had to be pulled free by the others. Despite stopping for repairs in Disko, the *Alert's* overstrained engines repeatedly gave out and the *Loch Garry* took her in tow, but a heavy gale forced the *Loch Garry* to drop the line, and the *Alert* disappeared from sight. The *Thetis*, *Bear*, and *Loch Garry* arrived in St. John's on July 17. The *Alert* straggled in the following day to find a celebration already in progress. Local dignitaries held a reception for the expedition, but the Cape Sabine survivors were too weak to attend.

Afterward, Schley sent the *Loch Garry* to New York with Greely's records, his preliminary report, and three bags of mail from the squadron. Chambers and *Loch Garry* arrived the evening of July 26, and found several reporters waiting for them. His stories only whetted the press's appetite for more news of Greely's rescue and Arctic adventure.¹⁴

The *Thetis*, *Bear*, and *Alert* left St. Johns on the 26th and arrived at the Portsmouth Navy Yard on the 31st. They deliberately delayed their arrival to allow the preparation of a carefully planned welcoming ceremony. The Navy's leading reformer, Rear Admiral Stephen B. Luce, gathered the six ships of the North Atlantic Squadron along with almost every other warship from the Atlantic coast for the largest U.S. fleet gathering and naval review in more than a decade. The following day, the relief expedition's officers joined Chandler, Hazen, and Luce for a reception in their honor onboard Luce's flagship, the

Tennessee. There, Chandler praised Greely's rescuers for their "incessant vigilance" and "unwearied exertion" and affirmed that the decision to put the rescue entirely in the Navy's hands had been correct. Its "arduous responsibilities could have fallen into no better hands. Every officer and man . . . has given his best and most untiring efforts." In later speeches, Chandler expanded on this theme and adroitly used the publicity of the relief expedition to lay the case for naval modernization.¹⁵

There followed three days of celebration and receptions with various dignitaries and the press, several parades, and other festivities that included performances of "Home from the Frozen Seas," a song written to commemorate their return. Chandler and the Navy carefully staged and coordinated much of this, including the daily tours of the expedition's ships by over 9000 people and the rapid publication and distribution of a transcript of the welcoming celebrations. The squadron sailed for New York on the 5th and arrived on the 8th. There, President Arthur personally welcomed them at a reception that night. He complimented their bravery and spoke in favor of naval expansion. Lesser celebrations followed in other coastal cities, and each garnered the navy additional favorable press. Several states and municipalities awarded medals to the relief expedition's officers, among them Maryland, which awarded Schley a gold watch for the "skill, foresight, and determination" with which he led the expedition. Artifacts and photographs from the expedition appeared in museums and expositions for the next decade.¹⁶

Conclusion

Momentum for naval modernization built steadily through the remainder of the

summer and fall while Congress remained out of session. Throughout the months of the expedition's preparation and voyage, newspapers around the nation published a barrage of articles critical of the sad state of the navy. After Greely's return, tales of his adventures filled newspapers for weeks. Editorials praising the Navy and calling for its increase and modernization accompanied many of them. Much of this was carefully orchestrated by Chandler and other navy officials including the officers of the Office of Naval Intelligence and Lieutenant J. D. J. Kelly, newly ordered to duty at the *New York Herald*, who deluged the press with statistics and data.¹⁷

Congress reconvened for its second session on December 1, 1884 when President Arthur presented his State of the Union address, and he devoted a considerable part of that speech to naval modernization. Arthur underlined that the Greely Relief Expedition proved both the utility of the Navy and the skill of its officers. "The organization and conduct of this relief expedition," he said, "reflects great credit upon all who contributed to its success." Its success demonstrated the progress made by the Navy, and he urged Congress to restore "our Navy as rapidly as possible to the high state of efficiency which formerly characterized it." "It is plain that the policy of strengthening this arm of the service is dictated by considerations of wise economy, of just regard for our future tranquility, and of true appreciation of the dignity and honor of the Republic."¹⁸

Press coverage of the Army's role in Greely's expedition remained harsh. Journalists wanted a scapegoat for the disaster, and eventually settled on General Hazen, the man who sent Greely north with such strange orders. Hazen's efforts to blame Garlington and other subordinates while exonerating himself in the series of internal investigations and courts martial that followed further tarnished his reputation.¹⁹

Certainly the success of the relief expedition allowed the Navy to tarnish the reputation of the Army, but much more was at stake than bureaucratic infighting. Reform-minded Navy officers wanted more than just an increase in naval spending. The Greely Relief Expedition wiped the taint of embarrassing collisions, accidents, and previous Arctic failures. It displayed the talents of a new generation of officers and offered proof not just of the Navy's need for new ships, but also that its officers were ready and capable of commanding them and sailing them into the most dangerous waters of the planet. It proved that naval officers, especially the younger generation, were far from the drunks and misfits whose misadventures the press had chronicled through the 1870s. Chandler paraded the officers of the expedition before the press as examples of the officers who would lead the New Navy—brave, resourceful, and technically competent. Officers who, as Schley proclaimed, could be “trusted in all emergencies to fulfill the expectation of our beloved people.”²⁰

The success of the Greely Relief Expedition helped naval officers attract nationwide attention to the plight of the Navy and they used the expedition and its heroes to galvanize support for its modernization. The effect on Congress was dramatic. Senator Long, drawing on the writings of the Navy's ‘Young Turks,’ declared, “preparation for war, the possession and appearance of power and the ability to strike back are the best guarantees of peace.” In a pointed reference to the Greely Expedition, Representative Joseph W. Keifer (R OH) asked “will you take the brave men of America and put them in obsolete vessels upon the sea?”²¹

In sharp contrast to their first session, the members of the 48th Congress, in generally polite and constructive discussions over the next week, voted to increase the

naval budget and appropriate funds for modern ordnance, armor, and other modernization efforts. On March 3, 1885, Congress funded the construction of four new warships: the cruisers *Charleston* and *Newark*, the first American warships built without auxiliary sails, and the gunboats *Yorktown* and *Petrel*. Future Congresses appropriated funds for new warships each succeeding year, marking a sharp break in naval policy and ending the Navy's so called 'doldrum years.'

The Greely Relief Expedition moved discussions of naval affairs to the front pages of the nation's leading newspapers and dramatized the professional progress and readiness of a generation of officers who would spend much of their careers fighting to reform the Navy's outdated bureaucracy and modernize its obsolescent warships, tactics, and strategy. Most of the officers who served in the relief expedition continued to influence naval policy and fight for modernization in their later careers. Of the expedition's 21 officers, six rose to the rank of admiral, and most of the others enjoyed distinguished careers. Schley, of course, commanded the U.S. fleet in the Battle of Santiago in the Spanish-American War. Chandler appointed Melville the Chief of the Bureau of Steam Engineering in 1887, a position he held for sixteen years and during which he superintended the design of 120 new warships and produced a number of innovative engine designs. John T. Lowe pioneered the development of submarines, Charles J. Badger helped introduce radio to the fleet, and Chambers would guide the navy's aviation program in its first years.²² The expedition emboldened a generation of officers and gave them confidence to push more aggressively for reform, and Congress, which had balked at funding new construction in 1884, appropriated funds for new

warships in 1885 and every year after creating of what reformers were already calling the ‘New Navy.’



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¹ Winfield Scott Schley and J. R. Soley, *The Rescue of Greely*, 155; *New York Times*, March 18, 1884, 4 and March 19, 1884, 4; *New York Tribune*, July 23, 1884, 1; Peter Karsten, “No Room for Young Turks,” *U.S. Naval Institute Proceedings* 99 (March 1973): 37-50; *Congressional Record* 48th Congress, 1st Session, 574, and *Congressional Record*, 48th Congress, 2nd Session, 1974.

² *Congressional Record* 48th Congress, 1st Session, 3364.

³ Edward Ellsburg, *Hell on Ice: The Saga of the “Jeannette”* (New York: Dodd Mead, 1938); George Melville, *In the Lena Delta* (Boston: Houghton Mifflin, 1892); Raymond Lee Newcomb (ed.), *Our Lost Explorers: The Narratives of the “Jeannette” Arctic Expedition as Related by the Survivors and Last Journals of Lieutenant De Long* (Hartford and San Francisco: American Publishing and A.L. Bancroft, 1884).

⁴ John E. Caswell, *Arctic Frontiers: United States Explorations in the Far North* (Norman: University of Oklahoma Press, 1956), 96-8.

⁵ Schley and Soley, *The Rescue of Greely* (NY: Scribner’s, 1885), 23.

⁶ Caswell, *Arctic Frontiers*, 106-8; David G. Colwell, “The Navy and Greely: The Rescue of the 1881-1884 Arctic Expedition,” *USNIP* 84 (January 1958): 71-79; and Winfield Scott Schley, *Forty-Five Years under the Flag* (New York: D. Appleton, 1904), 144-45.

⁷ Leonard F. Guttridge, *Ghosts of Cape Sabine* (NY: Putnam’s, 2000), 160-233; and Jan Marcin Weslawski and Joanna Legezynska, “Chances for Arctic Survival: Greely’s Expedition Revisited” *Arctic* 55, (December 2002), 373–379.

⁸ William A. Kirkland to Bureau of Navigation, New York Branch of National Archives, RG 181, April 14, 1884; and Schley and Soley, *The Rescue of Greely*, 155.

⁹ Washington I. Chambers Journal, 1884-1885, Chambers Papers, Library of Congress; Schley and Soley, *The Rescue of Greely*, 153-4; Schley, *Report of the Greely Relief Expedition*, 27-28.

¹⁰ *Thetis* Logbook, 1884, NARG 24.

¹¹ *New York Herald*, July 27, 1885, 8; *Thetis* Logbook, 1884, NARG 24.

¹² Schley and Soley, *The Rescue of Greely*, 165-6; Schley, *Forty-Five Years*, 150-159.

¹³ *Thetis* Logbook, 1884, NARG 24. Adolphus W. Greely, *Three Years of Arctic Service: An Account of the Lady Franklin Bay Expedition of 1881-84 and the Attainment of the Farthest North* (New York: Charles Scribner's Sons, 1886).

¹⁴ Chambers Journal, 1884; Schley, Report of the Greely Relief Expedition, 72; Albert Gleaves, *The Life of an American Sailor: Rear Admiral William Hemsley Emory* (New York: George H. Doran Company, 1923), 66; New York Herald, July 27, 1884, 8; New York Times, July 27, 1884, 2; and several unspecified newspaper clippings, Chambers Papers, Box 42.

¹⁵ *New York Tribune*, August 5, 1884, 1; and Reverend William A. McGinley, *The Reception of Lieut. A. W. Greely at Portsmouth, New Hampshire on August 1 and 4, 1884* (Washington: GPO, 1884).

¹⁶ *Boston Daily Advertiser*, August 5, 1884, 1; and *New Orleans Picayune*, August 4, 1884, 1; and Maryland State Archives 425 (1886), 891.

¹⁷ Peter Karsten, "Young Turks," 45; Mark Russell Shulman, *Navalism and the Emergence of American Sea Power* (Annapolis, Naval Institute Press, 1995), 32, 52-4; and *Milwaukee Sentinel*, December 6, 1884, 5.

¹⁸ Chester Arthur, State of the Union Address, December 1, 1884, available at <http://www.thisnation.com/library/sotu/1884ca.html>.

¹⁹ *New York Times*, December 19, 1884, 4; December 20, 1884, 4; April 18, 1885, 4; and April 20, 1885, 4; *Boston Daily Advertiser*, October 24, 1884, 4; *Saint Louis Globe-Democrat*, January 13, 1885, 7; and *The North American*, December 4, 1885, 1.

²⁰ McGinley, *Reception of Lt. A.W. Greely*, 45.

²¹ Congressional Record, 48th Congress, 2nd Session, 2036 and 2042.

²² For Badger, see Susan J. Douglas, "Technological Innovation and Organizational Change: The Navy's Adoption of Radio, 1899--1919," in *Military Enterprise and Technological Change*, ed. Merritt Roe Smith (Cambridge, Mass.: MIT Press, 1985), 155-65. For Chambers, see Stephen K. Stein, *Washington Irving Chambers: Innovation, Professionalization, and the New Navy* (Ph.D. dissertation, The Ohio State University, 1999).