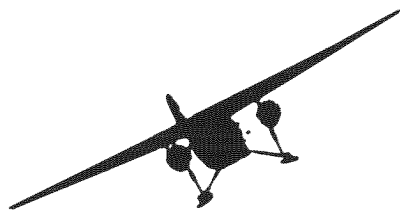


TO THE POLE



Richard E. Byrd as a naval aviator. (BP, folder 7639)



# TO THE POLE

The Diary and Notebook of  
Richard E. Byrd, 1925–1927

*Edited by*  
Raimund E. Goerler



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# Introduction

**R**ICHARD EVELYN BYRD (1888–1957) HAD A spectacular career as a polar explorer and pioneer aviator. His flight to the North Pole in 1926 established him as a public hero. Songs, poems, parades, medals, and other honors followed. Adoring parents named their children in his honor. He received the Congressional Medal of Honor. More honors and parades followed his flight across the Atlantic in 1927, the third after Charles Lindbergh. For the remaining three decades of his life, Byrd invested his resources and his energies in the exploration of Antarctica.

In contrast to his lustrous public career, Byrd's private diary is ordinary—even shabby—in appearance. Its cover is a faded black, and it bears the printed title “Diary, 1925” although the document contains passages written in 1926 and 1927. Byrd wrote most entries in pencil and with a hasty hand. Many

pages are blank; some pages have notes and mathematical calculations that are randomly placed. Clearly the diary served Byrd as both a daily journal and a convenient message pad.

Nevertheless, this unappealing book is an extraordinary document. Byrd wrote the entries for himself, not for public inspection, although in 1928 he quoted from parts of the diary for his book *Skyward*. At the time of its writing, the diary was a private notebook for recording Byrd's thoughts and observations about himself, about his colleagues and his rivals, and about his family and the state of his career.

Some pages reveal Byrd as a man deeply in love with his wife, Marie, as a father who missed his family greatly during expeditions, and as a man of ambition determined to make his place in history. Others offer new insights into a public hero's thoughts, and observations about other contemporary explorers, especially Roald Amundsen, the Norwegian explorer who reached the South Pole in 1911 and the North Pole three days after Byrd in 1926.

In several places it is clear that Byrd was not entirely obsessed with seeking fame for himself, a charge that his rivals voiced. For example, he often praises the work of his subordinates. At times he raises philosophical questions about man and nature—questions that reappeared in his most famous book, *Alone*, his account of his near-death experience in a weather station in the interior of Antarctica in 1934.

The diary, begun at a time when Byrd was relatively unknown to the general public, is also significant chronologically. The events and times recorded in the diary set the stage for his most outstanding accomplishment: the exploration of Antarctica. From 1928 to his death in 1957, Byrd organized or helped to lead five expeditions to Antarctica. Without his 1925 ac-



accomplishments in Greenland, his flight to the North Pole in 1926, and his 1927 transatlantic flight, it is very unlikely that Byrd would have gained the recognition and support necessary for his later career to blossom.

Of Byrd's numerous achievements, the one that has always been the most disputed and controversial was his claim to have been the first to fly to the North Pole in 1926. Critics have claimed that Byrd's plane was not fast enough to have reached the North Pole in the time he said it had. One skeptic has even scoffed that Byrd flew out of sight, circled for hours, and then returned. His diary contains not only daily entries leading up to the flight but also messages from Byrd to the pilot and navigational calculations. When Byrd warns the pilot Floyd Bennett, "You are steering too far to the right," the reader cannot help but be transported back in place and time to the cockpit of the *Josephine Ford*, May 9, 1926.

Several principles guided me in editing this intensely personal document. First and foremost, it had to be an accurate representation of the original. Byrd's handwriting was reasonably legible but done hastily at times. In a few places, I was not able to decipher his hand and have used brackets to explain. Sometimes the identity of an individual to whom Byrd referred by surname could not be established. All editorial comments in the text are enclosed in brackets.

A few pages of navigational calculations to the North Pole in the diary show evidence of erasures, which are still faintly legible. No one will ever know who did the erasures, or when they were done. I had the diary photographed by means of ultraviolet light to make certain that all erasures had been detected and could be read properly. Erasures are noted in this edition.

A second principle that guided me in editing was the need for clarity. The diary's organization is confusing and misleading. For example, it begins with Byrd's speculation about what the new year (1925) will bring. A few pages after this come the communications from Byrd to Floyd Bennett during the flight to the North Pole on May 9, 1926. Pages concerning the 1927 transatlantic flight follow. Next come daily notes about the USS *Chantier's* cruise from New York to Spitzbergen and preparations for Byrd's 1926 flight to the North Pole. The diary ends with daily entries about Byrd's expedition with Donald MacMillan to Greenland in 1925, and mixed with these are still more notes about the North Pole flight.

The disorder can be explained. Byrd began the diary in January 1925 and turned to it again on June 20, 1925, at the beginning of his expedition with MacMillan. In April 1926 the frugal Byrd used the blank pages of his 1925 journal to record his North Pole flight of that year, which ended on May 9; in June 1927 he used more blank pages to make notes about his transatlantic flight. Sometimes Byrd crossed out the printed dates for 1925; sometimes he did not.

For clarity, I have rearranged the diary entries in chronological order, from the Greenland expedition in 1925 to the North Pole flight of 1926 and the transatlantic crossing of 1927. The notes explain where these sections appeared in the original diary.

A third principle of editing was historical context. I have attempted to explain the diary with reference to historical events that affected Byrd—or events that he shaped. I have included photographs and maps to help situate the diary in its time, and I have added an introduction to each section of the diary to set the stage for Byrd's words.

The historical context includes scholars' writings about Byrd. Both my introductory texts and the notes refer to other scholars' works and to points of disagreement and controversy. Particularly important is my use of the massive collection (one and a half million items) of Byrd's papers, which is located at The Ohio State University. These papers remained inaccessible to scholars for many years after Byrd's death in 1957. They were made fully available for research by the Byrd Polar Research Center Archival Program in 1994. The notes contain references to historical documents that have not been previously cited.

Byrd remained a historic figure long after this diary ended. For this reason, I have added an epilogue summarizing his life and work after 1927. The bibliography contains a brief list of literature about Byrd for the interested reader, and the two appendixes include a chronology of Byrd's life (appendix A) and a navigational report submitted to the National Geographical Society for the controversial North Pole flight (appendix B).

I wish to thank several people who helped me in a variety of ways. Barbara Hanrahan of the Ohio State University Press encouraged this publication. So, too, did William J. Studer of the Ohio State University Library and Ken C. Jezek and Lynn Lay of the university's Byrd Polar Research Center. Dennis Rawlins, an expert in historical astronomy, Gerald Newsom, a professor of astronomy at Ohio State University, and William Molett, a retired Air Force officer and navigator, provided very helpful comments, although differing opinions, about Byrd's navigational calculations for the North Pole flight. Finally, the copy editor, Nancy Woodington, gave my manuscript careful scrutiny and made several helpful suggestions.



# The Making of an Explorer

RICHARD EVELYN BYRD,

1888-1924

**R**ICHARD EVELYN BYRD, WHO WAS BORN ON October 25, 1888, at Winchester, Virginia, belonged to one of the oldest and most influential families of that state. In 1671 Colonel William Byrd had established the family in Virginia and developed Westover Plantation along the James River, near Jamestown. After the Civil War, the Byrd family moved to Winchester. Richard Evelyn Byrd, the explorer's father and namesake, achieved distinction as an attorney in private practice. He also pursued a political career, serving as a prosecuting attorney for twenty years, and as speaker of the house in the Virginia state assembly.<sup>1</sup>

The family's prominence seems to have inspired a desire for

1. Charles J. V. Murphy, *Struggle: The Life and Exploits of Commander Richard E. Byrd* (New York: Frederick A. Stokes, 1928), 1-12; Edwin P. Hoyt, *The Last Explorer: The Adventures of Admiral Byrd* (New York: John Day, 1968), 1-19.



Richard Evelyn Byrd at 15, a cadet at Shenandoah Valley Academy. (BP, folder 7638)

achievement in all of its sons. Harry Byrd, the explorer's older brother, followed his father into politics and won election first as governor and then as a U.S. senator. He was a force in Democratic politics for many years. Richard's younger brother, Tom, became a successful businessman and owner of apple orchards.



A pivotal event in the life of the future explorer took place in 1900, when he was twelve, when he received an invitation from Adam C. Carson, who had been an attorney in his father's firm, to visit him in the Philippines. Carson had been stationed there as the captain of a regiment that was putting down an insurrection against the American occupation in the wake of the Spanish-American War of 1898, and after the revolt he stayed on as a district judge.

This opportunity gave Byrd the experience of travel and adventure that shaped much of his life. He journeyed alone to San Francisco and then to Japan before reaching the Philippines. A year later, he traveled around the world to make his way back to Virginia. Not only did he have extraordinary opportunities to observe unusual places, events, and cultures; he also wrote about them. His letters from the Philippines ran as stories in the Winchester newspaper. Even as a teenager, Byrd was a celebrity, at least in Winchester.

For a young Southerner of distinguished family—and for anyone who liked to travel—a career as an officer in the U.S. Navy was a good choice. From 1904 to 1907 Byrd attended first the Shenandoah Valley Academy and then the Virginia Military Institute. After a brief career at the University of Virginia, where his brother Tom was a student, Richard Evelyn Byrd entered the United States Naval Academy in Annapolis in 1908.<sup>2</sup>

Byrd was adequate in academics and excelled in sports, especially football. While at the University of Virginia, he had been a second-string quarterback and had been injured in a game against Washington and Lee University. At Annapolis, he

2. For the early years of Byrd's life, *Struggle* is the most detailed source. For a history of the Byrd family, see Alden Hatch, *The Byrds of Virginia* (New York: Holt, Rinehart and Winston, 1969).

Commander Byrd, for whom I predict a brilliant career, if only the opportunity for service can be given him.”<sup>6</sup>

A year later, Byrd’s abilities as an organizer and an efficient planner earned him both recognition and a transfer to Washington, D.C., where he was first assigned to the Bureau of Naval Personnel and then to the Commission on Training Camps. Having had these positions later proved useful to Byrd as an explorer. At the Commission on Training Camps, he served as secretary to Raymond B. Fosdick, the chairman. Fosdick was a prominent attorney and an associate of John D. Rockefeller. He was president of the Rockefeller Foundation from 1920 to 1936 and a lifelong friend and supporter of Richard Byrd.

With Fosdick’s support, Byrd sought and won appointment as a naval aviation cadet at Pensacola Naval Air Station in 1917. A career in flying was an exciting one—and it did not demand long hours of standing on a weak right foot. Byrd earned his pilot’s wings and also a position as assistant superintendent at Pensacola, with responsibility for investigating crashes.

By redirecting his career into naval aviation, Byrd made significant contributions to a new field. When he won his wings, barely fourteen years had passed since the Wright brothers had first flown at Kitty Hawk, North Carolina. Byrd became an expert in night flying and took a particular interest in the problems of navigating airplanes. The speed of airplanes, the distance from landmarks, and the vulnerability of aircraft to winds posed unusual navigational challenges, and Byrd taught cadets about these topics.<sup>7</sup>

6. R. Livingston Beechman to Secretary of the Navy Joseph Daniels, June 28, 1917, BP, folder 4126.

7. See BP, folder 4128.

The war in Europe, begun in 1914, was proving the usefulness of aircraft as military weapons, especially for observation of troop movements and submarines. Airplanes covered more area faster and were less vulnerable to weather and enemy fire than balloons. After the United States entered the war in 1917, Byrd proposed flying the flying boats to Europe instead of shipping them. The Navy promoted Byrd to the temporary rank of lieutenant commander and assigned him to Halifax, Nova Scotia, to watch for German submarines and to establish refueling stations, which would make flying boats' transatlantic crossing possible.

When—unfortunately for Byrd—the war ended in November 1918, so did the urgency for getting airplanes to European battlefields. But he remained enthusiastic about a transatlantic crossing by flying boats as a natural development of aviation and navigation. In 1919 Byrd joined the newly created Transatlantic Flight Section of the Bureau of Aeronautics and continued to work on problems of navigation and logistics. Eventually he developed a bubble sextant and a wind-drift indicator that enabled navigators to fix their location quickly in flight, without reference to landmarks. On May 29, 1919, having set out from Long Island and after numerous stops at sea, the flying boat NC-4 reached Lisbon. This was the first transatlantic crossing. Two weeks later, on June 15, the Englishmen John Alcock and Arthur Whitten Brown completed a successful flight from St. John's, Newfoundland, to Clifden, Ireland, in sixteen hours and twelve minutes—the first nonstop flight across the Atlantic.<sup>8</sup>

8. Richard K. Smith, *First Across! The U.S. Navy's Transatlantic Flight of 1919* (Annapolis: Naval Institute Press, 1973), 191.



Byrd as a young naval officer. (BP, folder 7638)

Byrd himself had not made the U.S. Navy's first transatlantic flight, but he had made important contributions to its planning and navigation.<sup>9</sup> Although disappointed at not being on the transatlantic crossing itself, Byrd remained an influen-

9. Richard E. Byrd, *Skyward* (New York: G. P. Putnam's Sons, 1928), 78–99; also see “Statement of the contribution of Lieut. Commander Richard E.

tial figure in naval aviation. He returned to Washington and led the effort to create a Department of Aeronautics in the U.S. Navy. With the Navy, he joined in opposing Colonel Billy Mitchell's efforts to create an air force independent from those operated by the Navy and the Army. Byrd testified to Congress in 1919 in support of the Navy and its air force.

As a reward for his services and in recognition of his desire to participate in another transatlantic flight, Admiral William A. Moffett, chief of the newly created Bureau of Aeronautics, ordered Byrd to duty in England. His navigational expertise would be useful to the crew assigned to fly the British-made dirigible ZR-2 to the United States in 1921. In England, however, Byrd missed his train—and the takeoff of the ill-starred ZR-2. While in flight, the dirigible exploded. Forty-five people died, including fourteen American aviators. Byrd became responsible for making a report about the incident and for working with the U.S. ambassador in acknowledging expressions of sympathy and condolences.

Despite the fate of the ZR-2, Byrd returned to Washington still a firm proponent of naval aviation. In 1922, he successfully proposed that the Navy continue to maintain a corps of trained pilots by organizing veterans into naval reserve units. Byrd was charged with the task of creating an air station in Massachusetts to train reserve pilots. His success there led to assignments in Chicago to organize more naval reserve units.

In 1924 Byrd returned to Washington to help the U.S. Navy in a political battle with Congress. A frugal-minded Congress proposed reducing the salaries of all servicemen. Byrd's

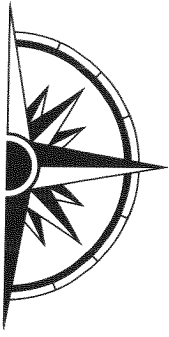
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Byrd to the Success of the Recent Transatlantic flight." BP folder 4127. The story of this transatlantic expedition is told in Smith, *First Across!*



previous successes made him a central figure in the campaign not to lower military salaries. In the end, he managed not only to save salaries but also to win a congressional promotion—the only way for a retired officer to advance in rank—to lieutenant commander.

By 1924, the thirty-six-year-old retired naval officer from Winchester, Virginia, had achieved much, but not fame. He had demonstrated courage at sea, innovation in the air, leadership in his naval assignments, and political acumen in the capital. In the Navy and in Congress he had attracted the favorable attention of powerful and influential men. All these would be helpful to him in the future.



## The Greenland Expedition of 1925

**E**XPLORATION OF THE ARCTIC BEGAN FOUR hundred years ago, first as a search for an ice-free passage for vessels and then as a quest for the North Pole. In 1909, when Richard Byrd was ten, Robert Peary, traveling by dogsled, asserted that he had reached the North Pole. Peary proved that there was no land at the North Pole and that there was no ice-free sea through which ships could pass, but his expedition raised new questions as well as answering some old ones. On his way to the North Pole, Peary had seen “Crocker Land,” which he had not been able to reach. Dr. Frederick Cook, who claimed to have reached the North Pole a year before Peary, had also reported the existence of a mysterious land (he named it “Bradleyland” in honor of his financial sponsor). What were these lands, and what did they contain? What lands and areas had the explorers overlooked in their quest for the North Pole? Much mapping and surveying remained to be done.



Byrd on the MacMillan Greenland expedition, posing with one of his airplanes, 1925. (BP, folder 7710)

Scientists had their own questions about the Arctic. They wanted to know about its climate and meteorology, terrestrial magnetism, ocean currents, natural resources, wildlife, and native peoples. Explorations on foot, however heroic, had barely opened the north for scientific investigation.

As early as 1897, the first attempt had been made to observe the Arctic from the air. Hot-air balloons had been used for battlefield observations, especially during the American



Civil War. A Swedish engineer, Salomon August Andrée, proposed to use a specially designed balloon to reach the North Pole and explore the Arctic. Backed by several scientific organizations and his government, Andrée and two companions boarded their balloon, the *Eagle*, and flew to the Arctic in 1897. From then on, nothing was known of them until, in 1931, a party of hunters found their bodies and their journals on White Island in the Arctic Ocean.<sup>1</sup>

The disastrous result of Andrée's efforts did not stop others from trying aerial exploration. In 1907 and 1909, Walter Wellman, a journalist, flew powered dirigibles rather than balloons into the Arctic. In an attempt to stir up patriotic fervor for his cause, he named his crafts *America*. Wellman's dirigibles failed because of bad weather, logistical problems, and mechanical difficulties.<sup>2</sup>

The invention of the airplane by Wilbur and Orville Wright in 1903 and its development during World War I excited polar explorers, including Peary. Planes that took off and landed at sea might be able to use cracks in the ice to their advantage, as places to land and refuel. Another possibility was to attach skis so that the airplanes could land on snow—provided that the surfaces were smooth enough. But light airplanes depended on the internal combustion engine, which did not perform well in extreme cold, and the strong and unpredictable Arctic winds could easily push the fragile airplanes off course.

1. Clive Holland, *Farthest North: The Quest for the North Pole* (New York: Carroll and Graf, 1994), 141–54; Pierre Berton, *The Arctic Grail: The Quest for the Northwest Passage and the North Pole, 1818–1909* (New York: Penguin Books, 1988), 498–510.

2. Holland, *Farthest North*, 181–92.

The years 1924 and 1925 were eventful both for aerial Arctic exploration and for Richard Byrd. In 1924, President Calvin Coolidge authorized a plan according to which a U.S. Navy dirigible, the *Shenandoah*, would fly from Point Barrow in Alaska, pass over the North Pole, and then land at Spitzbergen in Norway. Scientists and veterans of polar exploration like Captain Robert Bartlett, who had accompanied Robert Peary in 1909, lobbied for the attempt. The expedition was the project of the Navy Bureau of Aeronautics and Admiral William Moffett. Byrd, who reported to Moffett, was responsible for planning the expedition and doing the navigating. Unfortunately, in January storms damaged the *Shenandoah*, and the expedition ended before it began.

Byrd and Bartlett, undaunted, continued to plan for an aerial expedition to the north. Because Congress seemed reluctant, they decided to raise the money from private backers, as Peary and Cook had done. Bartlett agreed to find a suitable vessel and generous donors; Byrd's job was to ask the Navy for seaplanes and help with fund-raising. Byrd went to Detroit, met with Edsel Ford, and won his promise of \$15,000. John D. Rockefeller contributed a similar amount, and the expedition seemed likely to become a reality.

Byrd and Bartlett were not without competitors. In 1924, Roald Amundsen, who had reached the South Pole by dogsled in 1911, planned to fly airplanes into Greenland and the Arctic. Amundsen allied himself with Commander Lincoln Ellsworth, the son of an American millionaire, to purchase planes and begin an expedition in 1925. Byrd had originally volunteered to join Amundsen, but he was rejected.

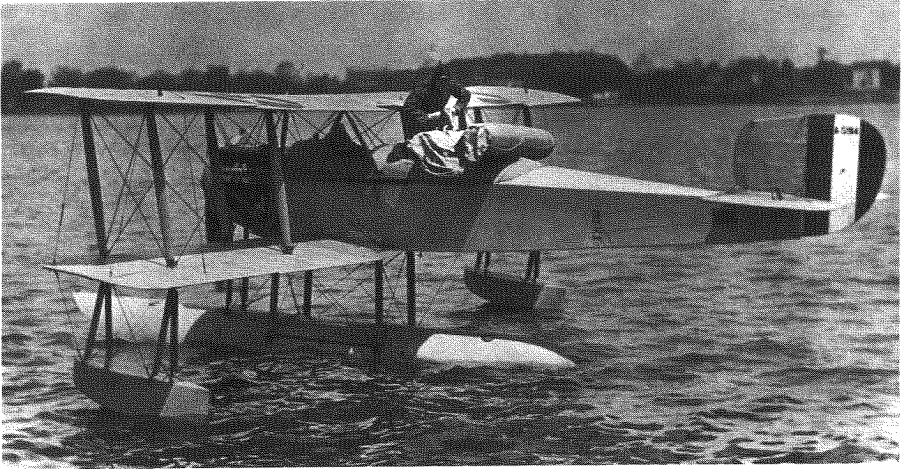
Another competitor and a veteran polar explorer was Don-

ald MacMillan. MacMillan and Bartlett had both been members of Peary's last expedition to the North Pole in 1909. MacMillan had remained active in exploring Labrador, Greenland, and the Arctic, and he had the kind of backing from universities and scientific organizations that Byrd lacked. Between 1913 and 1917, for example, the American Museum of Natural History, the American Geographical Society, and the University of Illinois had helped finance his explorations of northern Greenland, which disproved the existence of "Crocker Land." His expeditions included extensive work in geology, botany, ornithology, meteorology, ethnology, and anthropology.

In 1923 and 1924 MacMillan returned to Greenland and explored Cape Sabine and Ellesmere Island, again with the support of prominent institutions and organizations, including the Carnegie Institution and the National Geographic Society (which had given Peary large subsidies). With the help of the National Geographic Society, MacMillan proposed to return to Greenland in 1925. This time he planned to use seaplanes to extend his area of exploration, and he asked the U.S. Navy for assistance.<sup>3</sup>

MacMillan's request created a dilemma. The Navy had only three seaplanes available, certainly not enough to supply both Byrd's and MacMillan's expeditions. A decision to help out only one explorer would have been difficult to make—and probably controversial. On the one hand, MacMillan had earned the respect of universities and scientific organizations for his work. On the other, Byrd was an expert in navigation, a retired naval

3. Everett S. Allen, *Arctic Odyssey: The Life of Rear Admiral Donald B. MacMillan* (New York: Dodd, Mead, 1962), 314–21.



Byrd inflating a new raft especially designed for the MacMillan expedition, 1925. (BP, folder 7708)

officer, and a man who had wanted to stretch the limits of flight and aeronautical navigation for some time. Byrd also had some political influence both in Congress and among men of wealth, as well as a brother who had been elected governor of Virginia.

The result was a compromise. The Navy lent three airplanes and eight officers, mechanics, and pilots—under Byrd's command—to MacMillan, who was in charge of the expedition as a whole. In this way the Navy could take credit, through Byrd, for any accomplishments in the air, while pleasing both men's sponsors.

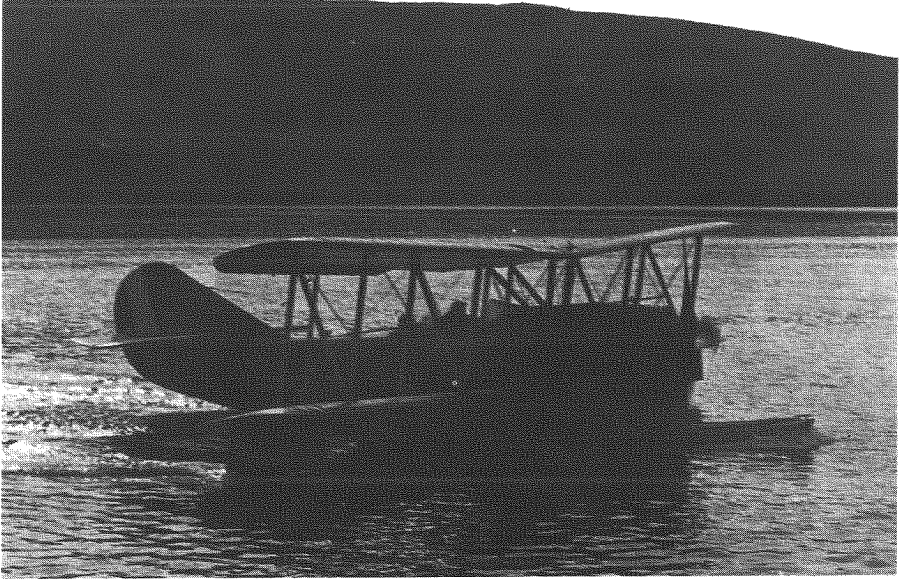
The expedition of two ships that left Wiscassett, Maine, on June 20 of 1925 proved to be an unhappy one. MacMillan commanded the USS *Bowdoin*, which he had specially designed for exploration in the Arctic. Byrd and his planes, three amphibious planes, NA-1, 2, and 3 (for "Navy Aircraft"), sailed on the

USS *Peary*, which was commanded by Lieutenant Commander Eugene F. McDonald. McDonald was a successful businessman, the president of the Zenith Corporation, and an investor in the expedition. He expected to be able to test his shortwave radio as an instrument for communication in the Arctic.

Byrd was often at odds with both McDonald and MacMillan. As the chief representative of the U.S. Navy, he had expected to be second-in-command of the expedition, a position that MacMillan accorded to McDonald. McDonald refused to observe U.S. Navy protocols in the use of the radio for communication, which naturally brought him into conflict with Byrd. The Navy insisted that its long-wave set be used when the planes were in the air. McDonald's shortwave set was to be used only when no planes were in use. Byrd also disagreed with both MacMillan and McDonald over the ships' speed, their course, and the proper conditions for air exploration. Much to Byrd's disappointment, on only fifteen days was the weather suitable for flying. He complained that MacMillan was too cautious.

As if conflicts arising from personality differences and leadership issues were not enough, Byrd and MacMillan also had fundamentally incompatible objectives. Byrd's goal was to test aircraft in the Arctic and, if possible, make a flight over the North Pole. MacMillan had less interest in the North Pole and more in the scientific investigation and survey of northern Greenland and the Arctic. The diary documents Byrd's points of view and his frustrations.

Despite problems, the three months' expedition managed to accomplish a great deal. MacMillan established a tidal observatory station at Etah in northwestern Greenland, conducted important ornithological studies, and took the first natural



Amphibious aircraft used during the MacMillan expedition. (BP, folder 7708)

color photographs in the Arctic. McDonald demonstrated that shortwave radio could be used in the Arctic for long-distance communication.<sup>4</sup>

Byrd and MacMillan continued to feud throughout the expedition, and at the end they also drew different conclusions about the use of fixed-wing aircraft in the northern Arctic. MacMillan wrote to his sponsors at the National Geographic Society, "I am more convinced than ever that far northern

4. Allen, *Arctic Odyssey*, 258. The photographer was Jacob Gayer of the National Geographic Society. See also Donald B. MacMillan, "The MacMillan Arctic Expedition Returns." *National Geographic Magazine* 48, no. 5 (November 1925): 515.

Arctic work will never be done by heavier than air machines simply because landing places are uncertain and caches of food and gas cannot be depended upon. A fiord is free today and ice bound tomorrow. . . . The lighter than air machine can do the work and should do it at the earliest opportunity."<sup>5</sup>

Byrd, however, as commander of the aviation unit, continued to have faith in fixed-wing aircraft for polar exploration, despite disappointing weather and mechanical breakdowns. To the readers of the *National Geographic Magazine*, he reported, "We were all depressed that we could not go on with our work, for we were learning the location of the few water landing places and we never gave up the hope of accomplishing our mission. With more time and a better season, I am confident that the unexplored area could have been reached."<sup>6</sup>

For Byrd himself, the expedition set the stage for his 1926 flight to the North Pole in several ways. First, it confirmed his stature as a leading navigator in the new field of aviation, and as an innovator in that field. The plans for the flight appeared in Byrd's article "Flying over the Polar Sea," in the *United States Naval Institute Proceedings* in August 1925. Second, as a result of the expedition, he was able to establish ties with the National Geographic Society, which had assisted the expedition in matters of navigation in the Arctic. Albert Bumstead, the cartographer of the National Geographic Society, had developed a special sun compass that magnetic fields did not affect, and

5. Donald MacMillan to National Geographic Society, August 20, 1925, BP folder 4228.

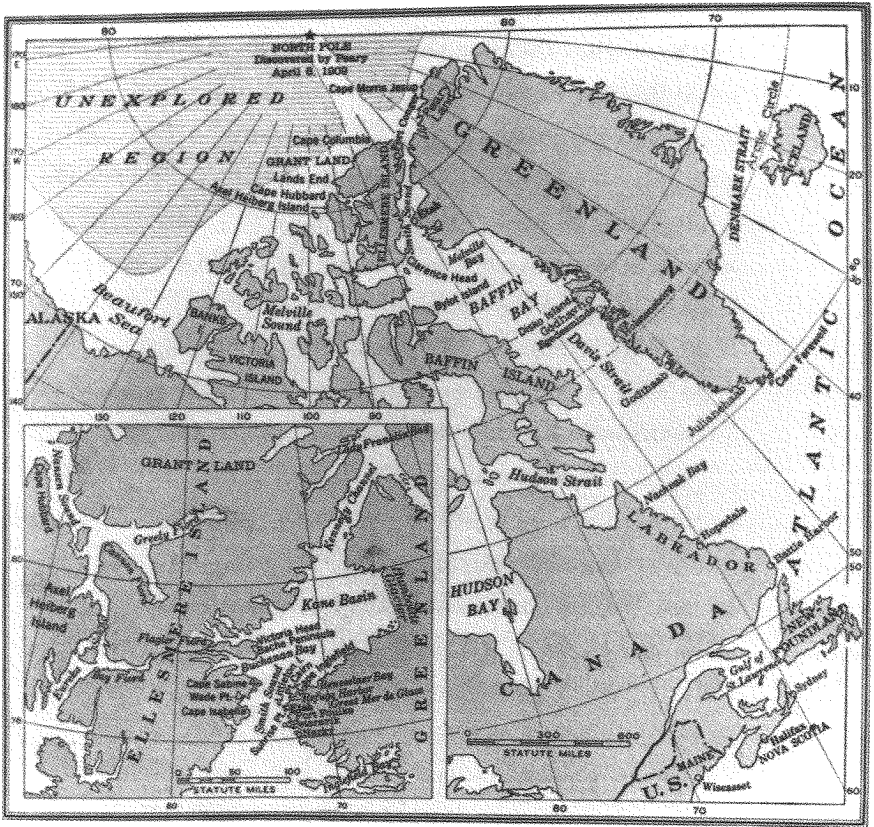
6. Richard E. Byrd, "Flying over the Arctic," *National Geographic Magazine* 48, no. 5 (November 1925): 519.

it was successfully put to use on this expedition for the first time. In November 1925, the *National Geographic Magazine* published accounts of the expedition by both MacMillan and Byrd. The National Geographic Society later became a prominent supporter of Byrd and his expeditions. Finally, the 1925 expedition allowed Byrd to forge links to people—for example, Floyd Bennett, his pilot to the North Pole in 1926, and wealthy supporters like Edsel Ford and John D. Rockefeller—who would be critical to his future success.

This portion of Byrd's diary also includes several references to his wife, Marie, and to his son, Richard Byrd Jr. By all the evidence in Byrd's papers, their marriage of forty-two years was close, even though the circumstances of polar exploration separated them for years at a time. Filled with frustration over the weather and his disputes with McDonald and MacMillan, Byrd sought peace when he wrote privately in his diary, "To have Marie in the midst of chaos, that is enough." There are many letters between Byrd and his wife and children in his papers at Ohio State, and it is clear from them that the publicly ambitious Byrd took an active interest in the news and birthdays and anniversaries of family life in Washington and Boston.

Marie Ames Byrd raised their four children—Richard, Katharine, Bolling, and Helen—managed the household, and in the frequent absences of her husband also took charge of their financial investments. The letters between Marie and her husband show that the explorer looked to her for practical advice and judgment as well as emotional support. On more than one occasion he counted on her to look into problems of expeditions while he was away.





Map showing the area explored by the MacMillan expedition. (Courtesy of the *National Geographic Magazine*)

*Thursday, January 1, 1925*

I wonder what the new year holds. Strange but the first seven months in every new year interesting things seem to happen to me. Every year seems to hold something unusual. I was married in January. Got severely broken up in [Ed.: "January" is crossed out here]. December 28. When I was a kid my trip around the world was decided in May. Entered the naval academy in May. Graduated in June. Went to Mexico in March. Left in England nearly dead with typhoid fever in June on one of the battleships. Went through Haitian and San Dominican revolutions in May-June. Went to war in April. Was assigned to aviation in June. Returned to states from war in January. Assigned to navigational preparations for first transatlantic flight in Jan. Was promised flight across Atlantic Ocean on ZR-2 in July. Escaped explosion of ZR-2 in August. Volunteered for Amundsen flight in Jan. but was ordered same month to Washington to assist Admiral Moffett in preparation for trans-Polar flight in *Shenandoah*. Got Bureau Aviation Bill through Congress in February.

I have been dreaming all winter of a trans-polar flight. I wonder if it will materialize. The President will not, I am sure, permit the *Shenandoah* or the *Los Angeles* to make the trip. When Congress adjourns, I shall wire Bob Bartlett and try to work out some scheme with him to raise some money and somehow or other get hold of a small dirigible—one of the e-type—and try the pack [ice] and unexplored region of the Arctic. I was greatly disappointed last year when the President called off the trans-

polar flight of the *Shenandoah*. There is a bill up in Congress to promote me. It will mean a tremendous lot to me but there are hundreds of bills on the calendar. What chance will my bill have?

*Saturday, January 3, 1925*

Is the human race an accidental by-product of the cosmical processes? If God directs us, remaining silent and inscrutable to us, then he means either that he does not want us to know him or he is indifferent or he has made the knowing of him a difficult task.

*Saturday, June 20, 1925*

The 20th has come at last and we left Wiscasset [Maine] at 2:45 PM today on schedule date. As anxious as I have been to get started on the expedition, I have felt so sad at leaving my precious family that I haven't been able to mention the subject to Marie. I am doing her (apparently) a miserable mean trick in causing her to go through all the apprehensions she has felt for weeks and will for weeks to come. I feel mightily low and wicked today on account of it and the wonderful send off we got from thousands of people has meant absolutely nothing to me for nothing could matter with this terrible ache I have tried so hard to hide.

Dear little Dickie [Richard Byrd Jr.] didn't realize what it was all about and that made me feel still more useless.

Poor little fellow. He is too young to realize what an irresponsible "dad" he has. Marie as always was a wonderful sport.

With all this on my mind, I had to make a speech on the City Common to hundreds of people and also accept for the naval unit wonderful hunting knives presented to the personnel by the National Aeronautic Association of Maine.

*Tuesday, July 7, 1925*

Met famous Mr. Perritt and family at Hopedale [Labrador].<sup>7</sup>

*Wednesday, July 8, 1925*

Had a very narrow escape from death a few minutes ago. [Harold E.] Gray and [Paul J.] McGee had just run a heavy copper uninsulated cable from the radio room across the gangway about the height of my head. They were trying it out with 100,000 volts and watching and listening to anyone passing by. I had on rubber shoes and was coming from aft behind their radio room door which was half open so that they neither heard nor saw me. My head got six inches from that wire before I was stopped and the 100,000 volts would have jumped to my head had I gotten one inch nearer! Gray was white as a sheet.

7. The Perritts were Moravian missionaries.

There's another narrow squeak. The gods of chance have been good to me. That wire will have to be well insulated.

*Sunday, July 12, 1925*

At last we are underway again. I am so anxious to get to Etah that every day's delay seems like a week. We had another near tragedy today. While standing on the bridge about 2 PM taking some sights I saw some thick smoke coming from amidships. I was there in a jiffy and found a pile of life preservers on fire. They were piled against one of the wooden wing crates near the planes. I threw one of the preservers overboard and put the fire extinguisher on the rest of them. We are already short on life preservers, so the incident is unfortunate but it could have been so much worse. Another minute and the flame would have ignited the oil and kerosene the plane is soaked in and nothing in the world could have saved this ship with 7600 gallons of gasoline around her decks.

As a result of this fire McDonald has agreed with my recommendation to put on a fire watch including the personnel of the naval unit and the doctor, [Jacob] Gayler and Kelty of the last three will volunteer, which of course they will do. When I suggested a watch, [A. C.] Neld immediately volunteered to go on watch. I have never seen such spirit as my men have. They never require orders.

Got a ticker today. Chronometer "A" 3.5 seconds fast. That is bad.

*Wednesday, July 15, 1925*

We should reach Disco [Island, near Greenland] tomorrow morning. McDonald told me today that MacMillan had given orders for us to wait for him at Disco. I told McDonald that the project might be a failure if we had to do that for it would probably be another two days before the *Bowdoin* would leave Hopedale and probably five or six days more getting here. Then a day or two wait here and we would get up at Etah too late to accomplish our mission. I urged McDonald in the strongest terms to ask MacMillan to let us leave Disco as soon as we get coal and water and to call his attention to the urgency of the matter. He promised to do that.

*Thursday, July 16, 1925*

Arrived Godhavn, Disco this morning 5:30. The local and district Danish governor came aboard early and gave us the startling information that we can get not a single ton of coal here. We haven't enough coal to get up to Etah and back here. There seems to be no coal on the Greenland coast. It looks as if the expedition is ruined but we'll get that coal somehow. The governor admits that he has coal and is mining it at the other end of the island but when winter comes he will have just enough for the eskimos here and in surrounding villages.

On top of this no one is allowed to go the village (about 150 eskimos) because the eskimos have an epidemic of whooping cough. The governor says he is afraid we will

carry the disease north and give it to the Etah eskimos. I tried to get the governor to have some laundry done for me but he said it couldn't be done. There has been no evidence what so ever of any hospitality.

*Saturday, July 25, 1925*

Do not the enigmas which life presents keep our interest as nothing else could. It is the inscrutableness of the sweetheart that keeps the lover happy and thrilled. There can be few bored moments if one can be alive to the contradictions which life presents. Does not there seem to be wisdom used for our good.

*Sunday, July 26, 1925*

This is the day I had hoped to reach Etah but here we are [at Godhavn].

*Monday, July 27, 1925*

Got underway this morning at 4:20. Seven more precious hours lost. I wish I could see this thing as MacMillan sees it. At 9:30 the *Bowdoin* hoisted sail and stopped her engine. For an hour and a half we trailed after her making only five knots.

*Tuesday, July 28, 1925*

7:45 a.m. Ran into flat pack ice today about 60 miles north of Upernivik. At first the flat pack ice was in cakes

and far apart but gradually the cakes got larger and larger until about 5 this morning the *Peary* and *Bowdoin* were completely surrounded by an apparently unbroken field of ice. A number of the boys went over the ship's side on the ice and walked several miles from the ships seal hunting. [Bromfield?] from the *Bowdoin* shot a seal in the head (a seal floats only when shot in the head). The seal was in a lead opened up by the *Peary* as she came through the ice. We went after her in one of the *Bowdoin* boats. The *Peary* has been under a great strain bucking ice for the past seventeen hours. She is however very staunch and powerful and has stood the strain well.

10 PM A lead opened up for us about 8 AM and we got out of the solid ice but there was continual bucking of large flat cake[s] of ice until 6 PM. Now the water is a dead calm and only a few ice bergs are in sight.

*Wednesday, July 29, 1925*

About 5 AM ran into fog and thick ice-caked field of pack ice. It is now 10 PM and the fog still envelops us. After lunch we walked a mile and a half to the northward but there was no break of any kind. It was a curious sensation to be enveloped in fog out on a flat field of ice in the middle of the summer. [Peter] Sorenson and [Floyd] Bennett [both of the naval aviation unit] went with me. We did not pass a living thing the whole way.

After dinner walked two miles to the westward with [Albert] Francis and found an open lead that melted away



in the fog. It ran northwest and southeast, the direction we want to go. I told MacMillan about it hoping that we would follow it through. He could get into it by following the lead we came here in. MacMillan says we will get underway if it clears a bit. Another precious day has been lost. We saw the track of a huge polar bear near the *Bowdoin* but no sign of [the bear] Bruno.

Our plane could probably get off this snow with skis.

The snow is quite sloshy in places and I was glad to find my eskimo boots water proof. Francis went in up to his knees. I had two close squeaks from getting a wetting.

The trouble is that we are heading for land too far to the eastward. We are bound to get into ice.

*Thursday, July 30, 1925*

Fog cleared sufficiently to get underway this morning. *Peary* bucked her way through ice until she got completely stuck and couldn't move forward or astern. *Bowdoin* got stuck and *Peary* had to back and turn with great difficulty to help her out. The *Peary* smashed the ice around her so that she could get clear.

About 5:30 this morning [Vold?] saw a seal and fired at it, hitting it. But a polar bear had been stalking the seal and jumped up when Neld shot. She evidently had a cub on the other side of the lead from her for she swam across the lead right ahead of the *Peary* about 50 feet away.

McDonald shot her through the head. The *Bowdoin* came up and took her aboard. We will get some fresh bear steak now which will be a treat. Sorenson shot a seal today.

I seem to be the only one worried about this terrible delay. I wonder if the others realize how serious the situation is as regards having sufficient time to accomplish our mission. I urged MacMillan to get underway when the ice broke some at seven o'clock but he wouldn't go as the fog had come down again.

I am the little ray of sunshine on this ship for I am continually after McDonald and MacMillan not to lose time. Of course we have been in ice. Should not have played game so damn safe.

*Monday, August 10, 1925*

I plead today with MacMillan to go north along the coast instead of over land. I believe there will be landing places here and there along the coast. McDonald knew of my desire to stick to water so he preceded me to the *Bowdoin* and had everything cut and dried before my arrival. He always does this. I was most vigorously turned down. This will probably mean the failure of the whole plan.

*Thursday, August 13, 1925*

Good weather has at last come. The NA-2 & 3 are out of commission. Bennett and I are going tonight for the

blessed old navy. We must make a showing for her. Everything went wrong today. NA-1 lost cowling overboard. NA-2 went down by nose. Almost lost her. NA-3 nearly sunk by icebergs and injured lower wing on raft.

Later. MacMillan wouldn't let me go. He seems to have given up.

MacMillan seems to be in [a] great hurry to pack up and go back. Wonder what is in his mind.

*Sunday, August 16, 1925*

I have concluded that MacMillan's hurry is due to coal shortage. I do not invite any confidence as long as McDonald is in power. He seems to be suspicious of everything and every one.

*Monday, August 17, 1925*

Begged MacMillan to let Bennett and me go today to Cannon Fjord but he would not agree. Wonderful day. Probably last chance.

The saving of the NA-3 from destruction by fire today was just another example of the fine spirit of the personnel the Navy has assigned to me for the duty. Whether we succeed or fail they deserve the highest success. They have overcome almost insuperable odds that the poor facilities and elements have brought about. They have

been near indefatigable and courageous and whenever they have a job to do they have needed no commanding officer to tell them to do it or to spur them to greater effort. What they have accomplished on this trip has been almost superhuman and even if we succeed in the highest measure it could hardly increase my pride in them. Their one thought seems to have been to live up to the best tradition of the navy.

*Saturday, August 22, 1925*

A remorseless cruel universe grinding out its destiny.

*Sunday, August 23, 1925*

To have Marie in the midst of chaos, that is enough.

*Bowdoin* went aground today 3 miles west of Karna.

*Monday, August 24, 1925*

Laying in Booth Sound on account of bad weather.

*Tuesday, August 25, 1925*

Captain doesn't know where we are. So won't send a radio tonight. Reached Conical Rock finally. Laying behind here on account bad weather.

*Wednesday, August 26, 1925*

Laying behind Parker Snow Point on account bad weather.

*Friday, August 28, 1925*

McDonald suggested to MacMillan over radio today that publicity be procured from reporting coal giving out on *Peary* and that probably she would have to use wood work on ship, etc.

*Saturday, August 29, 1925*

Arrived Anootok. Danish minister of Interior and director of all Greenland [illegible] on a Danish government steamer of about 40000 tons. Arrived here with just enough coal to make it. Pretty dangerous business in case of ice or a bad blow. We have had many close squeaks on this trip.

*Sunday, August 30, 1925*

Iceberg rolled over somewhere in bay making a tidal wave that nearly drowned bay, a very dramatic incident.

*Monday, August 31, 1925*

Cleanest dwellings I have ever seen at [blank]. Beautiful eskimo girl named Nuckleron [?].

*Thursday, September 3, 1925*

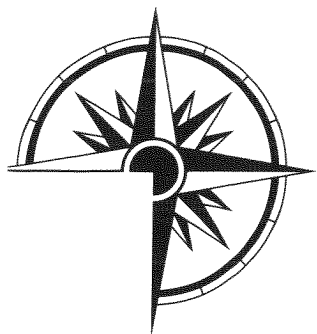
During the storm last night *Peary* missed an ice berg by about 15 feet—the third close squeak from destruction. We have certainly had good luck.

*Saturday, September 5, 1925*

Coal short. Must make port as coal is giving out. Laying off [illegible] somewhere. Not just sure where we are. Ship very light. Rolls dangerously. A bad blow would put us on rocks. Not enough coal to buck wind.

*Tuesday, September 8, 1925*

Terrible storm tonight. Wind 80 miles per hour. Two small boats from Danish gunboat *Island Falk* could not make their ship. Came alongside our ship. Both boats sank and came within an ace of losing several of the nine or ten Danes—a very dramatic moment. I have only once before experienced such wind—a typhoon in the China Sea. Much excitement on board last night.



## The North Pole Flight of 1926

**I**N SPITE OF HIS LIMITED ACCOMPLISHMENTS IN Greenland, Lieutenant Commander Richard Byrd predicted, “Aviation will conquer the Arctic—and the Antarctic, too. But it will be difficult and hazardous. These things, however, only increase the extraordinary lure of the Polar regions. . . . The world was determined that the North Pole should be reached, and now it will not be content until the secrets of this unexplored area are revealed.”<sup>1</sup>

At the time, others shared Byrd’s vision of using aircraft to reach the North Pole. George Hubert Wilkins, an Australian cinematographer, naturalist, and pilot, raised money from the Detroit Aviation Society and the North American Newspaper

1. Richard E. Byrd, “Flying over the Arctic,” *National Geographic Magazine* 48, no. 5 (November 1925): 519.

Alliance and began preparations for a transpolar flight from Alaska. He expected to fly from Point Barrow to Spitzbergen, and he invited Byrd to join the expedition as second-in-command. Instead of focusing on the North Pole, however, Wilkins claimed that his goal was to explore undiscovered areas and to find places for weather stations.<sup>2</sup>

Also in 1926, Roald Amundsen organized a multinational expedition to fly a dirigible from Spitzbergen to Point Barrow. The Italian government under Benito Mussolini sold a newly designed and improved dirigible, the *Norge*, to Amundsen at a discount. Umberto Nobile, the designer, was a member of the expedition. Amundsen chose a dirigible over an airplane as a result of the failure of his and Lincoln Ellsworth's 1925 attempt to fly planes to the pole. One of their two planes developed mechanical problems, and both landed on the ice; Amundsen and Ellsworth managed to fly one plane back to safety only after a perilous month spent on the ice. Their experience made the idea of a lighter-than-air vehicle capable of traveling great distances without refueling more attractive to both men. Private donations, the contributions of the Aero Club of Norway, and an exclusive contract with the *New York Times*, negotiated by Ellsworth, made their 1926 multinational expedition possible.

Richard Byrd organized his expedition with the North Pole as his objective. From the Federal War Shipping Board, the oversight agency for surplus vessels remaining from World War I, Byrd leased the USS *Chantier* for six months.<sup>3</sup> Byrd

2. George Hubert Wilkins, *Flying the Arctic* (New York: G. P. Putnam's Sons, 1928), 21.

3. Edwin P. Hoyt, *The Last Explorer: The Adventures of Admiral Byrd* (New York: John Day, 1968), 99, contains a statement that Byrd paid only one dollar



planned to carry his supplies, his crew, and his airplanes for the flight to the North Pole on the *Chantier*. Unfortunately, the ship was so small that the airplanes had to be disassembled for storage.

The choice of aircraft was a major decision. As late as January 30, 1926, Byrd was considering the possibility of using a dirigible rather than a fixed-wing aircraft, but then a three-engine Fokker became available for purchase at a reasonable price.<sup>4</sup> The three engines offered more safety than one, as the plane could fly some distance on only two engines.<sup>5</sup> In fact, Byrd's trimotor Fokker had demonstrated its superior dependability by winning the Ford Reliability Tour of 1925, a sixteen-hundred-mile schedule of intercity flights. Unlike Amundsen and Ellsworth in 1925, Byrd would not be forced to land because of difficulties with one engine.<sup>6</sup> A second, single-engined

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for the lease of the *Chantier*. Hoyt did not have access to Byrd's papers, which did not come to Ohio State until 1985. Among these papers is the contract for the *Chantier*, which was leased for \$3,375 for the first four months and \$968.75 for each of the following months. According to the contract, Byrd was responsible for repairs to the vessel and all port charges. See Charter, United States Shipping Board Emergency Fleet Corporation, March 24, 1926, BP folder 4322.

4. Statement by Lieut. Commander R. E. Byrd, January 30, 1926, BP folder 4256. See also the letter from Richard Byrd to Vincent Astor, January 13, 1926 (BP folder 4243), in which Byrd reported that Goodyear Tire & Rubber Company had offered to sell him a 320,000-cubic-foot airship for \$18,000.

5. The two-engine aircraft of the time could not continue to fly safely if one engine failed. See Peter M. Bowers, *Yesterday's Wings* (Washington, D.C.: Aircraft Owners and Pilots Association, 1974), 26.

6. The type of plane Byrd chose, a Fokker VII-3m, also established other endurance and reliability records. Fokker VII-3m's flew nonstop from San Francisco to Honolulu and from San Francisco to Australia. See Michael J. H. Taylor, ed., *Jane's Encyclopedia of Aviation* (New York: Portland House, 1989), 406.

plane, the *Oriole*, was to be used for rescue work and for filming the flight.

The importance of the three-engine airplane in this context cannot be overstated. The final statement to the press after the *Chantier* left New York City declared that while the expedition was “clean sport,” and the “adventurous side of this expedition appeal[ed] to every man going on it,” there was also a practical objective: “Conquering the Arctic with multi-motored planes will give an impetus to commercial aviation . . . the multi-motored plane is the answer. Science has made aircraft safe enough for commercial use. The stage is set. Confidence is all that is needed to lift the curtain on an era of rapid development in air commerce.”<sup>7</sup>

Byrd purchased the engines separately from the plane itself, choosing air-cooled motors from the Wright Aeronautical Corporation. Selection of a coolant was of special importance, for the cold of the Arctic challenged the viscosity of oils. Even Edsel Ford approved of Byrd’s selection of these motors over those of his own company: “Your selection of Wright air-cooled motors is a good one, and I believe this motor is by far the best worked out one of its type at the present time. The multi-motored plane is a great boon to safe transportation, and I believe eliminates 90% of the hazard, although I doubt that you will be able to find a plane that will stay aloft with one motor running only, under any consideration.”<sup>8</sup>

7. SS *Chantier* Farewell Statement, BP, folder 4298.

8. Edsel B. Ford to Lieut. Commander R. E. Byrd, February 2, 1926, BP, folder 4269. The actual contract with the Wright Aeronautical Corporation of Paterson, N.J., is in BP, folder 4327. Byrd purchased the airplane from the Atlantic Aircraft Corporation, a company owned by Anthony Fokker, for \$25,000. See R. E. Byrd to Atlantic Aircraft Corporation, February 10, 1926, BP, folder 4244.

Another fateful decision was the location of a base. Byrd knew from the 1925 expedition that good flying conditions in Greenland arrived late in the summer and departed soon after. Spitzbergen in Norway was more attractive than Point Barrow, the most northerly point in the United States, for two reasons. First, it was nearly four hundred miles closer to the North Pole than Point Barrow was. This relative proximity meant that Byrd's expedition need not (except as a precaution) stock fuel depots on the route to the North Pole, only to have to find them in bad weather conditions, land on the dangerous ice to refuel, and then take off again.

A second factor in favor of Spitzbergen as a base was its harbor. Warmed by the Gulf Stream, the harbor became open to shipping in the early spring. The *Chantier* could anchor in the harbor in late April or May. The Fokker could be reassembled on land and make its dash for the pole well before good flying weather came to Greenland.

For money to lease the *Chantier* and to buy the airplane, the engines, and supplies, Byrd turned to the same people who had helped him in 1925. Edsel Ford gave him \$20,000, even though Byrd had chosen a Fokker over a Ford. In gratitude, Byrd named the Fokker the *Josephine Ford*, after Ford's three-year-old daughter. John D. Rockefeller contributed an equal amount, and Byrd received additional donations from Vincent Astor and others.

To supplement this funding, Byrd turned to the news media,

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This document contradicts a statement in *Yesterday's Wings* (26) that Edsel Ford purchased the plane for Byrd. After the national tour that followed the North Pole flight of 1926, Byrd gave his North Pole plane to the Henry Ford Museum in Dearborn, Michigan.

guaranteeing them stories if they would make the expedition possible. For example, Pathe News, a producer of newsreels, signed a contract with Byrd that gave them the “exclusive right to take motion pictures.” The contract also pledged Byrd to “prevent by every means possible, other companies or cameramen from taking any motion pictures whatsoever of the expedition or any of its operations.” In return, Byrd would receive financial support for the expedition, earnings from any of Pathe’s motion pictures about the expedition, and two prints to use in lectures.<sup>9</sup> The *New York Times* also invested money in the expedition in exchange for stories. A contract with the Pond agency promised Byrd a lecture tour after the expedition as a way to defray any debts he had incurred.

Finally, Byrd signed a contract with David Lawrence of Current News Features which guaranteed financial support for the expedition in exchange for the rights to receive and sell articles and photographs about the expedition to other newspapers. The least Byrd would receive from his attempt, even if it failed, was \$18,000.<sup>10</sup> A successful flight would earn as much as \$30,000 if Byrd wrote enough firsthand accounts.

On April 5, 1926, the *Chantier*, under the command of Michael J. Brennan of the Merchant Marine, left New York City with much publicity and celebration. The expedition exemplified Byrd’s skill as an organizer and careful planner. The *Chan-*

9. Pathe Exchange, Inc., to Lieut. Commander R. E. Byrd, March 10, 1926, BP, folder 4289.

10. Current News Features Incorporated to Commander Richard E. Byrd, February 6, 1926, BP, folder 4251. Byrd signed the contract, which eventually paid him \$30,000, on February 13.

*tier* carried two airplanes and their fuel, food to sustain the expedition for six months, and enough coal for fifteen thousand miles, or half again as much as Byrd expected to need—a lesson learned the previous year.

Also on board were fifty volunteers.<sup>11</sup> Originally, Byrd had expected to have to beg for volunteers from the Navy reserves, with whom he had worked during and after World War I, but excitement about the Byrd Arctic Expedition was so widespread that more men volunteered than could be used. Particularly noteworthy among the crew were the pilot Floyd Bennett, who had been on the 1925 expedition, and Lieutenant George Noville, a former naval officer and flight engineer with expertise in lubricating agents for aircraft engines. Byrd made Noville his executive officer, the individual responsible for directly supervising and coordinating the crew.

Another distinguished volunteer was Malcolm Hanson, a civilian on loan from the Naval War Research Laboratory. Shortwave radio was still in its infancy, especially in the Arctic, where magnetic interference made communication difficult. Hanson had the important responsibility of installing a reliable shortwave system in the *Josephine Ford* and the *Chan-tier*. Clearly, the Byrd Arctic Expedition expected to profit from advances in shortwave communication following the expedition to Greenland in 1925.

Byrd's selection of two other volunteers showed his caution and attention to detail. William C. Haines of the U.S. Weather Bureau helped identify the best conditions for a flight to the North Pole. Byrd also had Harold (Doc) Kinkaid, of the

11. A list of the members of the expedition is in BP, folder 4252.

Curtiss-Wright aircraft company, on board to apply his technical expertise to the *Josephine Ford's* engines.

Despite the careful preparations, however, numerous problems arose. First, though many in the crew were not experienced seamen, they faced the challenge of securing the precious airplanes against potentially rough and ice-covered seas. When the *Chantier* reached King's Bay at Spitzbergen on April 29, a Norwegian gunboat, the *Heimdahl*, blocked the harbor. Its captain refused to move from the one pier—even for a few hours—because he feared that the ice floating near the harbor would damage his vessel.

Instead of waiting for the *Heimdahl* to move, Byrd, inflamed by the sight of Amundsen and Ellsworth's expedition making its preparations, ordered his crew to make a pontoon bridge from the *Chantier* to shore. The crew nailed planks across the ship's lifeboats and hauled the planes and other cargo to the island. Any wave or floating cake of ice could at this point have ended the expedition—and possibly the career of its commander.

Once Byrd was safely ashore, another problem awaited him. He had little experience with taking off and landing an airplane with skis. His previous experiences had been with pontoons and with wheels; skis were more fragile, and they had not been used on the 1925 expedition to Greenland. The weight of the plane and its three engines caused the first attempted flight at Spitzbergen to end in broken skis. Byrd and his crew experimented with lightening the load of equipment and supplies in order to reduce the stress on the skis.

In overcoming this difficulty, Byrd benefited from the advice and assistance of Lieutenant Bernt Balchen, a Norwegian

pilot assigned to Amundsen. Balchen, who was experienced in flying with skis, helped make new ones from the *Chantier's* oars, coating them with a special resin to reduce friction. In addition, he recommended taking off at night, when the cold would freeze the runway hard, and there would be less friction.

Finally, at half-past midnight on May 9, 1926, the *Josephine Ford* lifted off. Floyd Bennett did most of the piloting, Byrd acting as navigator. The navigator's role was in many ways a more active one than the pilot's, since the navigator had to operate several instruments, verify positions, and direct the pilot to adjust course. Byrd used the Bumstead sun compass to find direction, a chronometer to find longitude, a bubble sextant for latitude, and smoke bombs and a drift indicator in the trap door of the *Josephine Ford* to gauge the influence of the wind on the light plane.

Byrd described the navigation in an account published in the *National Geographic*: "Every minute or two he [Bennett] would look at me, to be checked if necessary, on the course by the sun-compass. If he happened to be off the course, I would wave him to the right or left until he got on it again. Once every three minutes I checked the wind drift and ground speed, so that in case of a change in wind I could detect it immediately and allow for it."<sup>12</sup> Much of their communication was by means of hand signals and handwritten notes, since the noise from the three engines was too loud for them to speak to each other. At some point in the flight, Byrd noticed oil spraying from the tank of the starboard motor. Instead of risking a landing on the

12. Richard E. Byrd, "The First Flight to the North Pole," *National Geographic Magazine* 50, no. 3 (September 1926): 371.



Pathe cameraman filming the *Josephine Ford* as it was being prepared for flight to the North Pole. (BP, folder 7739)

ice (especially on the hastily built skis) to check the engine, Byrd, believing that the *Josephine Ford* was close to the North Pole, directed Bennett to continue northward. They would rely on two engines to return them to Spitzbergen.<sup>13</sup>

Finally, Byrd reported, “At 9:02 a.m. Greenwich Civil Time, our calculations showed us to be at the Pole! The dream of a lifetime had at last been realized.” Pilot and navigator took readings and motion pictures, circled, and returned. During the return, the sextant fell and broke, making it impossible to take sightings. After a total flight time of nearly sixteen hours, the *Josephine Ford* returned to Spitzbergen.

Byrd submitted the records of his North Pole flight to the U.S. Navy for scrutiny by a panel of experts at the National

13. Richard E. Byrd, *Skyward* (New York: G. P. Putnam's Sons, 1928), 196–97.





The *Josephine Ford* returns to Spitzbergen from the North Pole (restaged for the cameras). (BP, folder 7739)

Geographic Society. This group confirmed the navigational calculations and instrumentation as accurate. While noting the absence of sextant observations on the return trip, the report concluded that the return demonstrated Byrd's skill in navigating along a predetermined course and stated that "in our opinion [Byrd's return] is one of the strongest evidences that he was equally successful in his flight northward. The feat of flying a plane 600 miles from land and returning directly to the point aimed for is a remarkable exhibition of skillful navigation and shows beyond a reasonable doubt that he [Byrd] knew where he was at all times during the flight."<sup>14</sup>

Byrd received numerous honors for his accomplishment

14. "Commander Byrd Receives the Hubbard Gold Medal." *National Geographic Magazine* 50, no. 3 (September 1926): 388.

and became a public hero. The National Geographic Society presented him its Hubbard Medal. Congress awarded him the Medal of Honor and promoted him to commander (after he rejected the idea of making him an admiral). New York City threw him a ticker-tape parade. Requests for lectures and interviews abounded. Byrd referred to his new status with both pride and exasperation as “the hero business.”<sup>15</sup>

Despite widespread acceptance of the National Geographic Society’s report and Byrd’s own account, some had difficulty believing that he had in fact reached the pole. Even in 1926, skeptics, especially reporters in Italy who had expected Amundsen, Ellsworth, and Nobile to be the first to fly over the North Pole, argued that Byrd had fallen short of his goal. The *Josephine Ford*, they believed, did not have the speed to traverse the pole from Spitzbergen and return so quickly.<sup>16</sup>

After Byrd’s death in 1957, more skepticism and controversy erupted. In *Come North with Me*, published in 1958,

15. Byrd, *Skyward*, 207–21.

16. Charles J. V. Murphy, *Struggle: The Life and Exploits of Commander Byrd* (New York: Frederick A. Stokes, 1928), 204–5; Richard Montague, *Oceans, Poles and Airmen: The First Flights over Wide Waters and Desolate Ice* (New York: Random House, 1971), 12–13. Actually, the speed of the flight may not have been unrealistic. A telegram from *New York Times* correspondent William Bird to the *New York Times* reported that Byrd’s plane was “poleward” and was “expected back in sixteen to twenty-four hours.” See telegram of William Bird to *New York Times*, May 9, 1926, BP, folder 2536. The actual flight time was verified by Captain Michael J. Brennan. He recorded the plane’s departure and arrival in the log of the *Chantier* as 15 hours and 57 minutes. Takeoff was at 0037 Greenwich Civil Time; landing was at 16 hours and 34 minutes. See Michael J. Brennan to Commander Byrd, June 10, 1926, BP, folder 4319. In other words, the duration of the flight was only three minutes shorter than the minimum predicted at takeoff, a negligible difference.

Bernt Balchen disputed Byrd's ability as a navigator. In 1960, Gosta H. Liljequist, a professor of meteorology at the University of Uppsala, after compiling and examining meteorological records, concluded that there could not have been a strong enough wind to enable the *Josephine Ford* to return from the North Pole so quickly. In 1971 Richard Montague, relying on interviews with Bernt Balchen, published a story that Floyd Bennett, before dying of pneumonia in 1928, had confessed to Balchen that the *Josephine Ford* had developed an oil leak early in the flight. According to Montague, Bennett confessed that the *Josephine Ford* had circled out of sight of land just north of Spitzbergen, with Byrd just claiming that he had made it to the North Pole. Finally, in 1979, Finn Ronne, who had been with Byrd to Antarctica, published in *Antarctica: My Destiny* a story that Byrd had admitted to Isaiah Bowman, president of the American Geographical Society, that he and Bennett had been no closer to the North Pole than 150 miles.<sup>17</sup>

17. Bernt Balchen, *Come North with Me* (New York: E. P. Dutton, 1958), 66; Gosta H. Liljequist, "Did the 'Josephine Ford' Reach the North Pole?" *Interavia* 5 (1960): 589-91; Richard Montague, *Oceans, Poles and Airmen*, 34-35, 47-48; Finn Ronne, *Antarctica, My Destiny* (New York: Hastings House, 1979), 188-89. Despite Ronne's recollections, Bowman and Byrd maintained a very cordial relationship, as their letters in Byrd's papers show. There is no evidence of or reference to the alleged confession of Byrd to Bowman.

Another prominent critic of Byrd's flight was Dennis Rawlins, *Peary at the North Pole: Fact or Fiction?* (Washington, D.C.: Robert B. Luce, 1973). In addition to issues of speed and the absence of sextant observations on the return trip, Rawlins also questioned why Byrd did not decorate the North Pole with the U.S. flags he carried on the plane (263-64).

One can only speculate about this matter. Byrd himself did not respond in detail, saying only that Peary had already done this. There are several possible explanations. One is that Byrd kept the flags to use as gifts to his prominent backers

Byrd also had his defenders. The National Geographic Society continued to credit his accomplishment. In 1973, Joe Portney, an expert in navigation, wrote an article that appeared in the *Journal of the Institute of Navigation* that questioned Liljequist's evidence of winds, reviewed Byrd's navigational instruments, and concluded that Byrd was likely to have come within at least fifty nautical miles of the North Pole, despite the primitive nature of his instruments.

Byrd's diary from the North Pole flight is revealing—but also mysterious. In his own words and at the time of the action, Byrd used the diary to record his feelings aboard the *Chantier*, his appreciation for his backers, and his crew. Byrd also voiced his mistrust of Roald Amundsen, believing him to be behind the *Heimdahl's* refusal to let the *Chantier* anchor at Spitzbergen.

Ironically, Byrd expressed appreciation for the help of Bernt Balchen, who would become his leading critic and skeptic. The diary proves that Byrd thought that Amundsen, public statements to the contrary, had not authorized Balchen to help. Byrd's information about Amundsen, however, could have come from Balchen himself, who must have been disappointed about not being included on the flight of the *Norge*, or from fellow American Lincoln Ellsworth, with Amundsen.

Particularly revealing are the communications from Byrd

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and to raise money after the flight, something that he did in fact do. Another is that the flags, which were said to number more than a hundred, may have been left behind to lighten the load, something Byrd would not have wanted to reveal when he presented the flags to benefactors. Finally, he may have been concerned about doubts that the flags' location might have cast on his claim to have flown over the pole. Winds, Arctic drift, and delays in the takeoff of the *Norge* could have moved the flags far from the pole by the time Amundsen would see them.

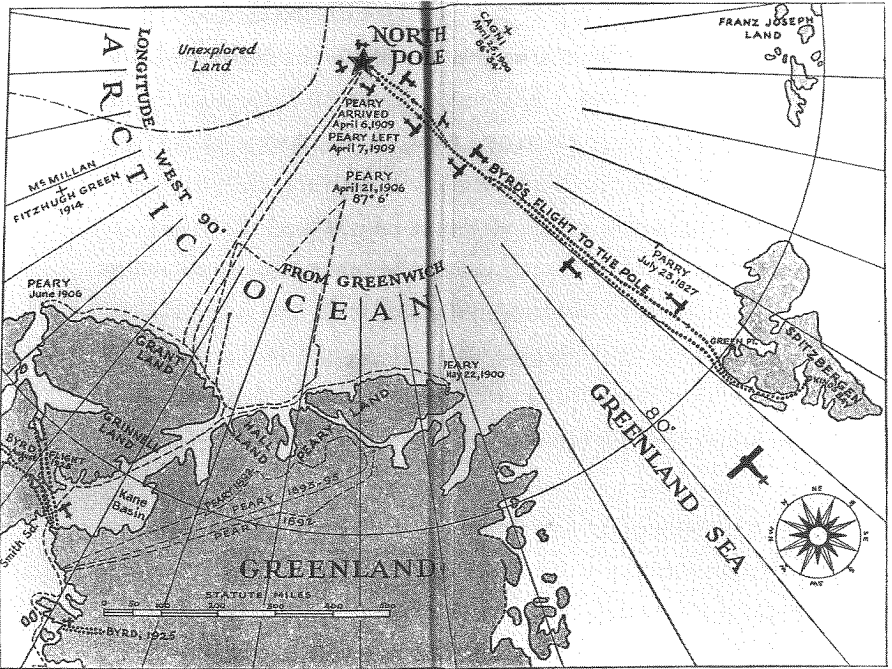
to Bennett during the flight. At several points in the diary, Byrd warns Bennett that he is steering too far to the right and that "there is a strong wind." This casts doubt on Liljequist's conclusion that there were no strong winds in the Arctic at the time of the flight. In other messages Byrd tells Bennett that the plane is 85 miles due north of Amsterdam Island and that they are 240 miles due north of Spitzbergen. At one point he instructs Bennett to radio that they are 230 miles from the pole. The series culminates in the statement that the *Josephine Ford* is at the North Pole, that Bennett should circle, and also that he should send a radio message back to the *Chantier* that the *Josephine Ford* is "returning with bad oil leak."

Unfortunately, Byrd wrote his messages hastily, on different pages of the diary. The exact order and time of each message will remain a mystery. The last page of the diary has a calculation by Byrd that they were only twenty miles from the North Pole. Clearly, this is proof that Byrd and Bennett did not merely fly into the horizon, circle out of sight of land, and return.

At the top of this page Byrd wrote, "The starboard motor has a bad oil leak," and "Can we get all the way back on two motors?" Directly below this are Byrd's calculations and his conclusion that the plane was twenty miles away from the pole. This tends to confirm Byrd's original account in his book *Skyward* that the oil leak was discovered near the North Pole, "when our calculations showed us to be about an hour from the Pole."<sup>18</sup>

That an oil leak in one motor would cause Byrd to abandon his effort to reach the North Pole seems unlikely. In planning

18. Byrd, *Skyward*, 196.



Map of Byrd's North Pole flight, from *Skyward*

for the flight, he had chosen a three-engine airplane specifically because he wanted to be able to continue flying if one engine failed. Near the bottom of this page is a partially erased question from Byrd to Bennett, "How long were we gone before we turned around?" No one knows who erased the question. But the answer,  $8\frac{1}{2}$ , is the number of hours Byrd reported officially to the National Geographic Society it had taken the *Josephine Ford* to reach the North Pole. It appears that when he posed his question to Bennett, Byrd really thought he had been at the pole.<sup>19</sup>

19. Dennis Rawlins, an astronomer and the publisher of the scientific-historical journal *DIO & the Journal for Hysterical Astronomy* who has specialized

Finally, the very existence of the diary supports Byrd. If it had contained evidence that he knew at the time of the flight that he had not reached the North Pole, he would, if deceitful enough, have destroyed it. Instead, Byrd published two references to the diary after the flight. In 1927 he wrote an article in the *National Geographic Magazine* about his transatlantic flight of that year and stated, "I made notes in my log and remarks in my diary, the same diary carried over the North Pole with me." He repeated this sentence in *Skyward*.<sup>20</sup> Repeatedly announcing the existence of the diary hardly seems like the action of a person who believes that it contains something that

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in examining polar explorers' navigational records, inspected the diary and the navigational calculations and notes. He found erased sextant readings that differ from those in the official report submitted to the National Geographic Society. According to Rawlins, the erased readings prove that Byrd came no closer to the North Pole than 150 miles. Rawlins's report is contained in a fifteen-page letter of May 4, 1996, to Raimund Goerler, now in The Ohio State University Archives.

Colonel William Molett, an experienced polar navigator who taught navigation and has published on the subject, reviewed both the diary and Rawlins's report. He concluded that the erasures were miscalculations that Byrd realized were erroneous. He believes that Byrd did not use the erased calculations and that there is no discrepancy between the official report and the diary. Colonel Molett's report is also in a letter to Raimund Goerler in The Ohio State University Archives.

Dr. Gerald Newsom, professor of astronomy at Ohio State, also studied the diary. His evaluation is that the erasures are inconclusive. In his view, the erasures were the work of a navigator who, although tired, was still alert enough to realize that he had made an error in his calculations. According to Professor Newsom, Byrd at a minimum got within "tens of miles" of the North Pole and may have reached it. See Gerald Newsom to Rai Goerler, July 9, 1997, The Ohio State University Archives.

20. Richard E. Byrd, "Our Transatlantic Flight," *National Geographic Magazine* 52, no. 3 (September 1927): 352; Byrd, *Skyward*, 252.

needs to be hidden. Even Byrd's erasures can be read without assistance, further evidence that he made no effort to conceal.

Not present in Byrd's account of his expedition to the North Pole is any reference to his wife or his son like those that appear in the Greenland portion of his diary. As Byrd himself noted, during the trip to Spitzbergen he was preoccupied with the details of planning the flight. In fact, he was so concerned with such vital matters as the type and quantity of survival equipment to take on the plane and the impact such additional weight would have on the consumption of fuel that he left the day-to-day management of the crew to others. Personal matters do not appear in this portion of the diary at all, which Byrd himself described as "a very poor affair."

However, at this time Byrd did create an extraordinary document that shows his concerns as a father and husband. On April 28, 1926, a few days before the *Chantier* was to arrive in Spitzbergen, he wrote a six-page letter to his six-year-old son, Richard, that was to be given to him only if Byrd perished during the expedition. Byrd instructed that the letter was to be read on his son's eighth, fourteenth, and sixteenth birthdays and once every four years thereafter.

Solemnly, the letter began, "If by hard luck I do not get back this is my farewell to you my dear boy, which I know you will take very seriously and all your life I hope you will try to follow what I ask you to do. . . . Your sweet mother can tell you how I adore you. But even she does not realize the depth of my affection for you. You are everything a son should be—devoted, unselfish, thoughtful, generous and honorable with an unusual sense of justice. You have I am very thankful to say many of your mother's traits."



Much of the letter described Byrd's love and admiration for Marie: "I have loved your mother since we were little children and I have never known her to do an unkind or an unjust thing. She is the sweetest, purest human being I have ever known or have ever heard of. She is an angel—too good I am afraid for this world. My boy, I worship her. She is the kind who never hesitates to sacrifice herself for those she cares [for], and then think nothing of it nor look for credit."

To protect his wife and to counsel his son in the event that he should not return to them, Byrd wrote: "My last words to you my boy are to beg you to consecrate your life to two things—first to understand, cherish and protect your mother and secondly to emulate her in all matters. Model yourself as much as you can after her for she is the finest person in the world." Finally, he urged his son to rely on his mother's wisdom: "Your mother has an extraordinarily logical mind. So you cannot go wrong if you will always take her advice. I have done so as a rule and she has never made a mistake."<sup>21</sup>

21. Letter from Richard Byrd to Richard Byrd Jr., April 28, 1926. BP accession 19961, box 1, folder 6.

*Monday, April 5, 1926*

At last we have started on our great adventure. *Chantier* left the Brooklyn Navy Yard today at 3:15 PM, 15 minutes after schedule, with one of the most remarkable send-offs I have ever seen. I cannot get over my astonishment that there is so much public interest in our expedition. I have never seen such kindly feeling as was shown by every one.

The outstanding incident of the departure was an extemporaneous and spontaneous talk made by Mr. Rockefeller during lunch on Vincent Astor's yacht. It was a wonderful talk. He referred to my great interest in [the] Pole. I know no man who is more interested in the progress of mankind than Mr. Rockefeller. I am very proud to have him backing me. Edsel Ford could not come due to his very early departure for Europe. Vincent Astor also was absent on account of the death of his uncle in law. There are no higher type men than these three who are backing me and [that] is in keeping with my original premise—that I must keep the expedition on a high plane in every particular.

It was good to have Tom and Harry see us off. It was with a feeling of unutterable relief that we left the dock. Our struggle to get ready to leave today has been terrific. The officers and crew of this ship have all put super human effort into their work and to them all goes the credit for getting off on schedule time.

I have had no peace for two months. Telegrams, phone

calls, letters. It is a curious feeling now to be able to relax. We are lying off Fort Hamilton [Brooklyn], correcting compasses and stowing the ship for sea and generally shaking down. I feel a deep gratitude to the men with me who have so willingly sacrificed themselves for the success of the expedition.

The ship is in an entirely disorganized condition and there are a lot of green men in the crew. But they are a high type all around and I predict that it won't take long to get fairly well organized.

I also feel a deep gratitude for our backers and the business firms who have helped us so generously. There are not enough words in the dictionary with which to adequately thank these people. I feel very inarticulate and unworthy of all this. I think of the expedition not as mine but as "ours," the boys with me and America's.

This day has proved that there is a lot of romance and spirit of adventure in this great country. I have received hundreds of telegrams and letters from all over the country. I have simply been overwhelmed.

The responsibility is terrific. The chance of some accident of fate that would prevent our getting started is terrible to consider. The hardest part of an expedition of this kind is the worry one causes those nearest and dearest. What one goes through on that score isn't ever to be written in a diary.

Next hardest thing is the preparation. The actual flights are easy in comparison. Almost every explorer has had great difficulty financing his expedition. Then the details of preparation are infinite. There are no gasoline stations in the Arctic and there are no aircraft factories to wire back to for spare parts.

I received today the following telegraph from my ship-mates in the Bureau of Aeronautics.<sup>22</sup> It has been surprising the number of people who have connected this trip up with providence.

*Tuesday, April 6, 1926*

The captain [Michael Brennan] has corrected his compasses and when we got underway the ship was three quarters ready for sea. The captain and I were most anxious to get going. "If I get underway," he said, "there won't be any questions about those stores being stored. The boys will have to work late into the night on the deck to straighten out the jumble of stores. That would be very serious in case of a heavy sea."

The spirit of the men on board is wonderful. When [George] Noville asked for volunteers today, the Doctor, Daniel O'Brien (from John Hopkins), the movie men, Donahue and Van der Veer and William Haines, the ex-

22. This appears to have been a telegram wishing Byrd and the expedition well. See Byrd to Admiral W. A. Moffett, April 10, 1926. BP folder 4319.

pedition meteorologist sent by the Department of Agriculture volunteered without a moment's hesitation. Every one was utterly worn out last night but feel better today.

We have stored our great 63 foot wing in the forward hold and have exercised exquisite care to prevent anything from falling on it. One's sensations are not the pleasantest when tons of weight are hanging over that wing. [A. A.] Touchette was lowering a big pyrene<sup>23</sup> today into the hold. The line got away from him and ran through his fingers so fast it burnt his hand. But he clamped down on it and stopped it, taking the skin off his finger rather than let the wing be injured.

Received a great many radio messages: Secretary of Navy, Edsel Ford, American Legion, [Vilhjalmur] Stefansson, the explorer, Admiral Peary's family, and many others. It is fortunate we have smooth weather for we are not entirely secured for sea.

Because we anchored off Fort Hamilton the newspapers heard that our wing was injured and sent a reporter to get the story.

*Wednesday, April 7, 1926*

Last night after supper I was making for my state room on the upper deck when a man furtively passed me. I

23. Pyrene is a yellow, crystalline hydrocarbon derived from coal tar and used to extinguish fires.

thought he looked familiar. I flashed my flashlight in his face and there was [Malcolm P.] Hanson, the radio engineer from the Naval radio research laboratory. I was greatly surprised.

“I confess to being a stow-away,” said Hanson. Now the expedition owes a very great deal to Hanson. He has worked day and night for weeks on high frequency radio sets for ship and plane. It seems that he had three or four more days work to do and deliberately stowed away and so sacrificing himself for the good of the expedition. He did not want me to know he was aboard when we left and so have the responsibility for his act. My only concern is to help him out of his scrape.

*Thursday, April 8, 1926*

We continue to get everything ship-shape. This morning shortly before seven o'clock the ship began rolling considerably—30 degrees rol[l]. I learned later and soon thereafter I heard the captain bellow “all hands on deck. There is something loose in the forehold.” This was an interesting moment for me. It meant that if the captain were right our wing would be smashed and the expedition ended ignominiously—failure with a capital “F.”

I did not wait to dress, reached the bridge in a moment. “Do you think it very bad, captain?” I said. He didn't know. We reached the hatch in a jiffy and with the help of the first mate got the hatch covering off. The gasoline

barrels and other gear were all intact. I was greatly relieved. One heavy gasoline barrel rolling around in that hold would have smashed the wing so that it could not be repaired. I have given orders to put double lashings on everything. There was a hole in the wing caused by a piece of timber from one of the beams. That can be repaired.

*Friday, April 9, 1926*

We have received the following message from the commander and Dr. Taylor of the Naval Research Laboratory (See Radio Log). So Hanson is saved if we can get him back to the States in time. We will let Hanson off at sea after his job is completed if we pass another ship homeward bound and if it is smooth enough.

*Saturday, April 10, 1926*

We are gradually getting well shaken down. There are mashed fingers, sea sickness, men tired out, etc[.], but all are happy and I believe I can say we have a happy ship. It looks as if we may reach Spitzbergen May 1st if all goes well.

*Sunday, April 11, 1926*

I am spending most of my time pondering the problems ahead, laying down my courses, etc. and leave most of the details of regulating things to [Lieutenant G. O.]

Noville and [Lieutenant R. E.] Oertel. Both of whom have a spirit and willingness beyond reproach. We let all hands, except those who have had to stand watch or check in the engine room take a day off. Very much needed rest. I found last night that our primus stove had not be[en] sent by Aberc[r]ombie and Fitch. I was much disappointed. Will take every possible means to procure one for our trip.

*Monday, April 12, 1926*

There is a wonderful spirit on board. [Charles E.] Gould the ship's carpenter is one of the best men on board. Works twelve or fifteen hours every day. While the ship was rolling last night one of the seamen slipped and fell on his face, waking him up, "Hello, up there. How are you?" he says and turns over and goes to sleep.

There is a great deal of hard work for everyone and it is this routine daily grind that tests a man. We are passing in the vicinity of ice.

*Tuesday, April 13, 1926*

[W. W.] Ehtagott, one of the West Pointers, has been in the mess room. Hates it and has broken over twenty dishes. Put him on deck and tried him out at the wheel. He did very well until the captain came on the bridge when he was 80 degrees off the course. I bet his bawling out beat anything he ever got at West Point.



We have had rough following seas for days.

Much difficulty breaking in helmsmen from among the volunteers.

*Wednesday, April 14, 1926*

Sat up until late last night making list of things to be taken on sledge and in plane. It is quite a problem to know just what to put on the sledge in case we have a forced landing and crack up. What one carries on the sledges may make the difference [between] success and failure, life and death.

*Thursday, April 15, 1926*

We are still so low by the stern that we have decided to move the coal from no. 3 hold, one of the after holds, to the starboard and midship bunker. We filled this hold with 900 tons of coal in order to have enough of coal to get to Spitzbergen and back to New York without coal-ing. Everyone on board including the Pathe news men, except the doctor, have turned to at the important job. The spirit of the men is great.

The engineer's force is making all the speed possible but we cannot seem to make more than 8 and one half knots. Hanson the stowaway is working day and night on the radio. He gets only three hours sleep on an average, a night. He has a terrific proposition [challenge] with the

high frequency radio. This field is so new he is meeting with many unsuspected difficulties. Whatever results he gets I am extremely grateful to him.

*Friday, April 16, 1926*

In spite of the almost superhuman effort of Hanson, [L. K.] Grenlie and [G. H.] James the noises about the ship prevent proper reception. I don't see how Hanson stands the loss of sleep as he does.

Spent last night weighing equipment to be taken on planes and also in deciding what is to be taken. The weight has to be kept down to a minimum and yet there are so many things we should have to add to our safety. We find that we should carry 1400 lbs of equipment, food, etc. That counts Bennett and myself. We think this may leave us with 1800 miles cruising radius but as to that we can't tell until we reach Spitzbergen and actually try out the plane.

Got about 20 tons out of the after hold today. That helps the trim of the ship a little. Half way to Trondheim [Norway] our destination in Norway. We should reach there the 25th.

*Saturday, April 17, 1926*

Got about 25 tons out of the after hold today. I shoveled coal in the morning and spent the afternoon working out

instructions for the main base to observe after we leave on our flight. We are flying in dangerous country. The 300 miles to Greenland is the most hazardous region in the world to fly over. If we should have a forced landing there we would be swept in to the Atlantic before we could cover 50 miles and the ice would melt under us.

Read [Robert Falcon] Scott's diary of his trip to the South Pole where he writes just before he died when his fingers would hold the pencil no longer. It is a wonderful dramatic though modest and simple narrative of unequaled heroism.

Though my state room is on the upper deck it is so rough tonight. The spray is bombarding my cabin.

*Sunday, April 18, 1926*

I am much too occupied with doings and plannings to give the proper attention to this diary. Consequently it is a very poor affair indeed. The most uninteresting one ever written. I guess that's saying a lot too.

Hanson has rigged up a sub radio station on the poop deck to get away from the interference he encounters at the main radio room amidships. It was frightfully rough and windy last night but not a word of complaint from Hanson and too he got good results. Good for Hanson.

All hands took a rest today. They certainly needed it

after very very hard work and long hours. It has been fairly calm today. There was a great deal of fun on deck—boxing etc. and the dog [Byrd's terrier, Igloo] and dummy goat afforded great amusement to everyone. The crew serenaded me outside my cabin tonight. I didn't know just what to do with a serenade but enjoyed it just the same.

*Monday, April 19, 1926*

Funny incidents: Touchette collecting mail for mail buoy. [Roy] Bryant getting pyrene when told to get fire hose for muddy chain when we were moving 900 tons of coal to move from 3rd hold to bunker singing "Sweet little coal bunker don't you cry. You will be empty bye and bye. When our commander is crossing the pole, we will be in the bunker shoveling coal."

Touchette trying to find the fishing box.

Bryant holding a line and when asked to let go the line didn't know what he had in his hands.

*Tuesday, April 20, 1926*

Bad blow continues to hold us back.

*Wednesday, April 21, 1926*

I have radioed ahead to Bird the newspaper representative to meet us at Saetimo Light on the coast 80 miles

from Trondheim in order to save time. He is bringing certain supplies we lack.

*Thursday, April 22, 1926*

Due to head winds yesterday and last night made only 6 knots. Too bad. We must get to Spitzbergen as soon as possible.

*Friday, April 23, 1926*

Looks as if this blow will never stop. We won't reach Saetimo Light until tomorrow night probably. I spend most of my time working on problems of the flight.

*Saturday, April 24, 1925*

N.Y. Times correspondent William Bird met us off Saetimo Light in a tug about midnight tonight. He brought with him about \$1,000 worth of supplies we had radioed ahead for. The ice pilot and Pathe news representative Wyand from London also came with Bird. Flares were lighted and moving pictures were taken of the three of them coming aboard.

Good old Hanson has left us. Went to Trondheim on the tug that brought Bird. I was delighted when the crew gave Hanson three cheers as he went over the side.

*Sunday, April 25, 1926*

Being Sunday I took the morning off.

Preparing for the polar flight is a matter of great detail and takes much time and thought. Noville has been a trump. He has relieved me almost entirely of the details of administering the ship! We have 55 men aboard now and it is no easy matter to keep everything running efficiently and smoothly. [Roald] Amundsen seems to us hurrying as much as possible. I am afraid [George Hubert] Wilkins and I have hurried him unduly.

We should reach Kings Bay early Friday morning.

*Monday, April 26, 1926*

The crew published a Sunday paper yesterday that was splendid. The jokes were great.

*Tuesday, April 27, 1926*

[Page left blank.]

*Wednesday, April 28, 1926*

Sent radio today offering help of our crew if he [Amundsen] should need it. Also asked him to arrange for us to go alongside dock.<sup>24</sup> Should get in tomorrow about 3 PM.

24. Byrd to Amundsen, April 28, 1926, BP, folder 4319: "Please arrange for our ship *Chantier* to go alongside dock at Kingsbay immediately upon arrival tomorrow night, Thursday, about 6 PM. I wish to offer you any help we are capable of. We have fifty men aboard. Kindest and best regards to you and all members

The crew is working hard to get everything ready to put the planes ashore immediately.

Got radio message that Wilkins was 13 days overdue. Hope he is o.k.

*Thursday, April 29, 1926*

Greatly disappointed today to hear from Amundsen by radio that we could not go alongside dock as there are two Norwegian ships alongside.

Amundsen sent a lieutenant from the Norwegian gunboat that is alongside the dock out to meet us. He informed us that he didn't know when we could go alongside dock.

We arrived about 4 PM. Asked the captain of the gunboat if we could go alongside him. He reluctantly consented. I called on Amundsen immediately but he was at supper. Met him later and went to his quarters with him.

I then called on captain of the gunboat and asked him when we could get alongside dock and get our plane ashore. He replied Monday. I then requested that he let us go alongside when he is not coaling at night and put the plane ashore. He would not do that.

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of your expedition from all members of our expedition and my personal greetings to you."

We cannot wait for days and I ordered the boats lowered so as to take the plane on four of our boats rigged together by planking.

I then called on Smithmeyer, the director of the coal mine. He told us that we would have to move from alongside the gunboat to allow a Norwegian whaler to get alongside and coal. We anchored out about 300 yards at midnight. Got our pontoon made and at this writing have the small plane's [the *Oriole's*] wing put aboard.

Got radio that Wilkins is OK at Point Barrow. Hurrah! Smithmeyer told us to go alongside dock. Small space other side [of] gunboat. We would surely have gone aground. I cannot understand.

*Friday, April 30, 1926*

Got Oriole (which the boys have named after my boy Richard III) to beach about 4 a.m. Two hunks of ice wedged ahead of it and prevented our getting the plane ashore. All the deck force and volunteers have been up all night. So turned in about 8 AM. Chief Engineer [T. B.] Mulroy, [Alton B.] Parker, [R. W.] Konter and several others went ashore and got plane ashore. Good Work. The men worked like Trojans all night. Turned to after lunch after the men had had some sleep and working in snow and cold got the fuselage aboard the one pontoon and the wing out of the hole. Great work. Just as we got the wing out large piece of field ice drifted down and just by a few seconds saved pontoon from being smashed.



Strong wind and ice prevented further operations. Our Pathe man had gone to beach where we were to put ashore our plane from our pontoon when he was approached by Amundsen's representative and informed that we could not take movies of our own operation. Great sportsmanship. They deny us dock, deny movie, make us move out in stream. The Viking valor.

Captain and I got through ice and brought back pontoon that was stuck in ice at the beach.

*Saturday, May 1, 1926*

In spite of anything the Norwegians do I intend to be a sport and be dignified and calm. They have made it very difficult for us. Didn't turn in until one thirty this morning. Got up every hour thereafter to look at ice which covered everything. When I turned in, no let up. Wind twenty knots too. Turned out about six. Relieved pontoon watch. No let up. Ice covers entire area between us and Kings Bay. At eight wind was calm and ice fairly stationary. Decided to take chance and put wing on fuselage and get ashore somehow.

We seem to have either no ice and wind or no wind and ice or both. The last of course is very dangerous. We may be licked but don't want to be licked waiting around and doing nothing. Noville, Bennett, ice pilot, all opposed to my decision [to build the pontoon bridge]. They were wise probably. Had difficult time fitting wing on fuselage that was on pontoon. Sent boat ahead to clear ice as

much as possible. Had 8 oarsmen on pontoon and dinghy placed between two leading boats of pontoon. A dozen men shoving off ice cake as we went along. Finally got ashore and had [a] lot of fun doing it. Got cheers from Norwegians, which we returned. Norwegians didn't think we would make it.

*Sunday, May 2, 1926*

Worked all night on beach to get plane ready but had bright sunlight. Built little hanger of [illegible]. Took lunch with Amundsen who professes great friendship but gave Lt. Balchen (who is a peach and wanted to help us and has helped us) orders not to come near us again.

*Monday, May 3, 1926*

Got motors started. Taxied plane up on hill towards hangar. Forward right ski split and fitting torn loose around fuselage. Very discouraging but we will not get discouraged. If no load has cracked ski what will full load do? True we made some fairly sharp turns. Treating [skis] with tar first. Very cold tonight. [S]ix degrees below zero. Several frozen feet. Amundsen got after Balchen again. The men are doing superhuman work.

[Editor's note: What follow are notes from the diary written during or about the time of the flight to the North Pole. Transcriptions are in the sequence that seems most likely. Illustrations of these pages at the end

of this chapter are in order as they appear in the diary. Navigational calculations are not included in the transcribed text but appear in the illustrations.]

[page 5 of diary, written May 9, 1926]

We are making good speed. It looks like fog over the polar sea. Send a radio back that we are making fast speed and are about to pass Amsterdam Island. We have a little drift to the left. Direction of wind from east. Now we can't see edge of ice pack.

I want to line up the mountain and Amsterdam Island. I will do it from top side. Watch me. We have drifted way over to the West. I am trying to get back on line. Please head on, I tell you.

[page 6]

You are steering too much to the right. Set compass few degrees to left.

Send a radio back that we are 85 miles due north Amsterdam Island. Got over ice pack just north of land.

I want to use a smoke bomb. Where is a match to strike with.

Send a radio that we are 240 miles due north Spitzbergen. Then pull in your wire.



You are keeping to the right 5 degrees too much.

You must [underlined three times] not persist in keeping too far to right.

Radio that we are 230 miles from the Pole.

Radio

Nothing but ice everywhere. No sign of life. Motors going fine.

[page headed "Cash Account November"]

There is a very strong wind. Please steer very carefully.

[page headed "Cash Account December"]

The starboard motor has an oil leak.

Can you get all the way back on two motors.

What has been our average air speed[?]

20 miles to go to pole.

[page 14]

We should be at the Pole now. Make a circle. I will take a picture. Then I want the sun.

Radio that we have reached the pole and are now returning with one motor with bad oil leak. But expect to be able to make Spitzbergen.

[page headed "Cash Account December," partially erased]

How long were we gone before we turned around?

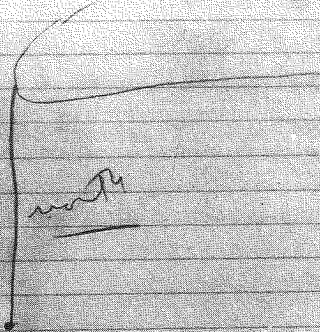
8½ [This response may have been written by Bennett.]

Head the plane right at the sun.

[The following photographs are pages from Byrd's diary pertaining to the North Pole flight, May 9, 1926. The photographs on pp. 83 and 85 are blowups of the previous pages, so that the reader can see the erasures more clearly.]

MONDAY, JANUARY 5, 1925

5  
Jan. 5



We are making good speed  
It looks like fog over the water sea  
send a radio back that we are  
making fast speed and are  
about to pass Amsterdam Island  
We have a little drift to the left  
direction of wind from east  
You see but can't see edge of  
see peak.

I want to line up the mountain  
and Amsterdam Island. I will  
do it from top side watch me  
We have drifted way over to the  
west. I am trying to get back on  
line. Please send back, tell  
you

Radio that we have reached the pole and are now returning with one motor with bad oil leak. But expect to be able to make Spitzbergen.

[page headed "Cash Account December," partially erased]

How long were we gone before we turned around?

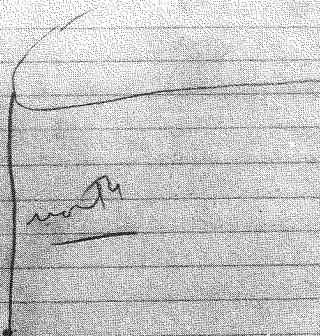
8½ [This response may have been written by Bennett.]

Head the plane right at the sun.

[The following photographs are pages from Byrd's diary pertaining to the North Pole flight, May 9, 1926. The photographs on pp. 83 and 85 are blowups of the previous pages, so that the reader can see the erasures more clearly.]

MONDAY, JANUARY 5, 1925

5  
Jan, 5



We are making good speed  
It looks like fog over the polar sea  
send a radio back that we are  
making fast speed and are  
about to pass Amsterdam Island  
We have a little drift to the left  
direction of wind from east  
You see but can't see edge of  
ice pack

I want to line up the mountain  
and Amsterdam Island. I will  
do it from top side watch me  
We have drifted way over to the  
west. I am trying to get back on  
line. Please send back. Tell  
you



6  
Jan. 6

TUESDAY, JANUARY 6, 1925

You are steering too much  
to the right. Set compass few  
degrees to left.

Send a radio back that we are  
80 miles due north Amundsen Island,  
70<sup>+</sup> are ice pack just north land  
I want to use a Swallow bomb  
when is a match box. to strike with.

Send a radio that we are  
240 miles due north  
Spitzbergen. Then pull in your  
wire.

You are keeping to the right  
5° too much.

You must not persist in  
keeping too far to right.

Radio that we are 230 miles from  
the Pole.

Radio.

Nothing but ice everywhere. no sign  
of life motor going fine.

8  
Jan. 8

THURSDAY, JANUARY 8, 1925

right 4-39-40 Chromometer  
21 car

4-39-19

Est

3.37

G.H.G.T

4-42-56

alt 16-00-00

3 13

5 15-51-47

DE 17 58 8

2-113

alt pl 16-00-00  
 78 3-13

---

θ = 15-56-47  
 Δe = 17 19 9

---

1 - 2 - 113

SUNDAY, JANUARY 11, 1925

Jan. 11

match 7-07-30  
20  
GWT 7-07-10  
29+ 3-37  
GACT 7-10-47

80 = 17-10-

6 50  
9-2 6  
17-22 84  
17  
2-12 34

$$742 = 17 \cdot 10 -$$

$$5 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10$$

$$17 \cdot 10 = 170$$

$$\begin{array}{r} 170 \\ 170 \\ \hline 340 \end{array}$$

$$\begin{array}{r} 170 \\ 170 \\ \hline 340 \end{array}$$

14  
Jan. 14

WEDNESDAY, JANUARY 14, 1925

We showed up at the pale  
now. walk a circle &  
will take a picture  
then I will cut the sun

Radio that we have reached  
the pale and are now  
returning with one motor  
~~to~~ with bad oil leak. But expect  
to be able to make Spitzbergen



Summer Line.

To be laid off towards observed body when observed altitude is greater than computed.

Example.

$$\begin{array}{r} \text{G.C.T July 27} = 6-06-20 \\ \text{Eq} = \quad \quad \quad \underline{6-20} \\ \text{G.A.C.T} = \quad \quad \quad \underline{6-00-00} \end{array}$$

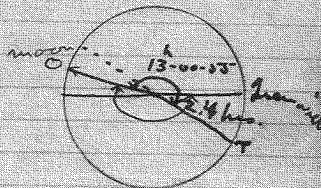
$$\begin{array}{r} \text{Alt. at Pole = Dec.} = 19-20-2 \\ + \text{observed} = \underline{16-07} \end{array}$$

$$\text{Polar dist.} = 90 - 13.2$$

Summer point To be laid off away from obs. body

Moon

$$\begin{array}{r} \text{G.C.T July 27} \quad 6-06-20 \\ \text{Sid. Time } 0^h \text{ of G.C.T. } 20-16-37 \\ \text{Corr. for G.C.T.} \quad \quad \underline{1\ 02} \\ \text{G.S.T.} \quad \quad \quad \underline{2-23-59} \\ \text{R.A. moon} \quad \quad \quad \underline{13-00-55} \\ \text{G.H.A} = \quad \quad \quad 10-36-56 \text{ E} \\ \quad \quad \quad \quad \quad \quad \underline{13-23-04 \text{ W.}} \end{array}$$



Alt moon at Pole =  $(90 - 13.2) = 76.8$  note that this is moon

$$\begin{array}{r} \text{alt moon} = 76.8 \\ \text{alt diff.} = \underline{3-53} \\ \quad \quad \quad \underline{5-20-00} \end{array}$$

to be laid off towards body.

Year Summer Time is reckoned from 4. odd

R.A. is measured counter clockwise from 12.00. alt.

336  
Dec. 2

WEDNESDAY, DECEMBER 2, 1925

to get true alt. of moon.

May 6, 1925 G.C.T. 18<sup>h</sup>-24<sup>m</sup>-00<sup>s</sup> alt. lower limb  
by sext. was 25°-30'30" eye 20 ft.

obs. alt.  $\ominus$  25-30-30 S.D. = 15-54' Hor. Par 58".  
 1<sup>st</sup> cor + 10-05 uny. 7" next alt.  $\nearrow$   
 appx alt. 25-40-38 + 16-01  $\nearrow$  45-53  
 Pt + falling 50-33 dip = -4' 23" + 10-05  
 true alt. 26-31-11 #  $\searrow$  5-30  
 $\searrow$  53

Parallax and refraction Tab. 24 ~ for moon add it  
for sun subtract it.

meridian altitude

June 21, 1925  $\lambda = 60$  W  $\delta = 40^{\circ} 04'$   
 sun bearing south.  $re = +3'$  height eye 20 ft.

obs. alt.  $\ominus = 40-04-00$  from Table I = 10-37  
 $\ominus = \frac{(P) 13-21}{96}$  cor for S.D. = 6.16 2  
 $\ominus = 46-47-21 (S)$  cor = 10-21 + 3.6  
 $\ominus = 18-21$

$Z = 49-42-39 (N)$

$d = 23-26-48 (N)$

$L = 79-09-27 (N)$

G.A.C.T. = 16<sup>h</sup>-00-00

$E_T + = 1-29.9$

G.C.T. 16-01-29.9

$\text{true} = 23-26.8$



THURSDAY, DECEMBER 3, 1925

337  
Dec. 3

Rule for meridian altitude

1. f.  $\odot$  Dec. same name f. quote,  $+90 + Dec = alt$
- 2 " " " " " Dec "  $-90 + Dec = alt$
- 3 " " " " " lower transit  $+90 - Dec = alt$

$$L = zenith\ dist + Dec. = 90 - \phi + Dec.$$

SATURDAY, DECEMBER 5, 1925

339  
Dec. 5

Course  
magnetic compass

King Bay to North East Sand - 301 true  
 1<sup>st</sup> hour 15° var. 316<sup>7</sup> magnetic  
 2<sup>nd</sup> hour 20° var 321 "  
 3<sup>rd</sup> hour 25° var 326 "  
 Speed 1<sup>st</sup> hour about 80 mph. = 70 nautical  
 2<sup>nd</sup> hour " " 80 " = 70 "  
 3<sup>rd</sup> " " " 90 " = 80 "

Sun compass

King Bay to North East Sand

$\lambda$  King Bay =  $11^{\circ} - 45'$  East =  $47''$   
 $\lambda$  after 1<sup>st</sup> hr. =  $6^{\circ} - 30'$  East =  $26''$   
 $\lambda$  " 2<sup>nd</sup> " =  $45'$  East =  $3''$   
 $\lambda$  " 3<sup>rd</sup> " =  $6^{\circ} - 15'$  East =  $25''$

L.A.T. = G.C.T.  $\pm$  2gt.  $\pm$   $\lambda$

Add when east, subtract when west.  
 working backwards will give an  
 return courses.

340  
Dec. 6

SUNDAY, DECEMBER 6, 1925

	<u>Course</u>		<u>Compass</u>
North East	Sand to King Bay		121 True
1 <sup>st</sup>	forty minutes	35° var	156 magnetic
1 <sup>st</sup>	hour thereafter	25° "	146 "
2 <sup>nd</sup>	"	20° "	141 "
3 <sup>rd</sup>	"	15° "	136 "

342  
Dec. 8

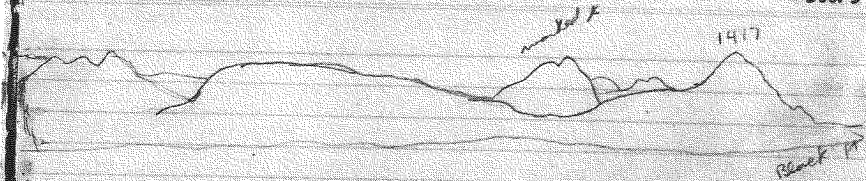
TUESDAY, DECEMBER 8, 1925



about Whitson Bay. only very small glaciers to Cape Col

WEDNESDAY, DECEMBER 9, 1925

343  
Dec. 9



		Chromatite	
apile	Hamilton	MEMORANDA	Hamilton
	5098	14578204	5088
9	1" - 20" slow		
10	1" - 18" "		
11			
12	1" - 18" S. 17 <sup>1/2</sup> cent	42" S 17 cent	21" S, 17 cent
13	1 - 22 S (?)	42" S (?)	25 (S)
14	1 - 24 S	37" S	30.5 S
15	1 - 26 S	18 f changed hand	32" S
19	1 - 21 S	21 1/2 f	18 1/2 S
22	1 - 33 S	12 f	31 S
23	1 - 32 S	13 f	31.5 S
24	1 - 33" S	13" f	31 S
25	1 - 33" S	13" f	31 S
26	1 - 34 1/2 S	12 1/2 f	30 1/2 S
27	1 - 33 S	14" f	29 1/2 S
28	1 - 34 S	13 f	31 1/2 S
30	25" f (?)	12 f (?)	37 S (?)
41	21 f	9 1/2 f	
5	20 f	9 f	
8	21 1/2 f	9 1/2 f	



CASH ACCOUNT

NOVEMBER

DATE.

RECEIVED.

PAID.

There is a very strong  
wind please see  
very carefully.

CASH ACCOUNT

DECEMBER

DATE.

RECEIVED.

PAID.

The 5th note  
has an air leak

can you get all  
the way back on  
two notes

what has been our  
average air speed

$$\begin{array}{r}
 85 \\
 82 \\
 \hline
 680 \\
 42 \\
 \hline
 722
 \end{array}$$

we

$$\begin{array}{r}
 8.65 \\
 11.40 \\
 \hline
 8.25
 \end{array}$$

$$\begin{array}{r}
 8.5 \\
 8.5 \\
 \hline
 17.0 \\
 12.40 \\
 \hline
 1.35
 \end{array}$$

8.5

9.75

12.40

1.35

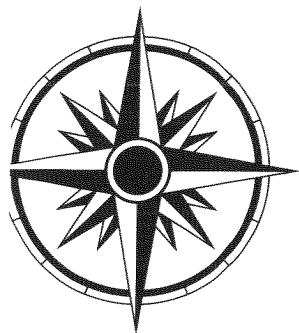
20 miles to 90 F. Pde.

How much more air you  
need to get there

8 1/2

Need to blow night at the sun





## The Transatlantic Flight of 1927

**A** FEW DAYS AFTER THE *CHANTIER* AND BYRD RETURNED TO New York on June 23, Rodman Wanamaker, the department store owner, sent the commander a letter of congratulations in which he said, "I hope you will have great success in carrying on to completion the wonderful pioneering scientific work of further exploration, which has reflected so much credit upon the United States." Wanamaker had been a financial contributor to Byrd's expedition. After Byrd's polar flight, Wanamaker made a final donation to cover part of the expedition's deficit, which totaled more than \$32,000.<sup>1</sup> A

1. Rodman Wanamaker to Commander Richard E. Byrd, July 1, 1926, BP, folder 4328; Richard E. Byrd to Raymond B. Fosdick, December 31, 1926, BP, folder 4266.

grateful Byrd cooperated with Wanamaker, allowing him to display the *Josephine Ford* at his Philadelphia store as a highlight of its celebration of the national sesquicentennial in July 1926.<sup>2</sup>

On July 9, Wanamaker hosted a special luncheon in honor of the members of the Byrd Arctic Expedition. Instead of delivering a speech, he welcomed his guests by reading from a letter he had written to the president of the Aero Club of America in New York on February 4, 1914. "In the cause of science and in the interest of world peace I have the honor to announce first of all to the Aero Club of America my intention to make a scientific test of aeronautic power by crossing the Atlantic Ocean in one flight, if possible." Wanamaker believed that airplanes capable of transatlantic flight would end the military competition among nations to build fleets of huge battleships that could be "destroyed by one aeroplane dropping bombs from the air." Wanamaker also believed that once airplanes could cross the Atlantic without stopping, a transatlantic passenger airline industry would develop. In 1914 Wanamaker had commissioned Glen H. Curtiss, a pioneer in the development of airplanes, to design and build a plane capable of flying across the Atlantic.

Wanamaker's 1914 proposal, not surprisingly, was overshadowed by the outbreak of World War I. By restating it at a celebration of Byrd's polar triumph, Wanamaker implicitly challenged Byrd to attempt a transatlantic flight. "I have read this letter carefully to you. It seems but a child's dream compared with the wonderful expedition that Commander Byrd

2. Richard H. Waldo to Lieutenant G. O. Noville, June 29, 1926, BP, folder 4328; also Richard E. Byrd to Rodman Wanamaker, July 3, 1926, BP, folder 4328.

and his crew have just made, but it indicates to you just how quickly America forges ahead, and always will be ahead, and it will be for you men, with your daring and your pluck to go ahead."<sup>3</sup> Byrd himself had been interested in transatlantic flight since his days at Pensacola and his navigational contributions to the U.S. Navy's crossing from New York to Lisbon in 1919. The success of the flight to the North Pole reawakened his ambition to fly across the Atlantic.<sup>4</sup>

Byrd also shared Wanamaker's interest in the development of commercial aviation. After exhibiting the *Josephine Ford* at Wanamaker's, Byrd lent the plane to the U.S. Department of Commerce and the Guggenheim Aviation Fund for a "tour of the United States to demonstrate the practicability of commercial aviation and to help to open up air ports in various cities." Floyd Bennett and Bernt Balchen flew the plane from Washington to San Francisco and back, stopping along the way at forty-four cities.<sup>5</sup>

With Wanamaker's support, Byrd organized the America Trans Oceanic Company. Wanamaker's conditions for backing Byrd were that a plane be specially built to accomplish a non-stop crossing, that it be named *America* in memory of the plane

3. Speech given by Rodman Wanamaker at the luncheon in honor of the members of the Byrd Arctic Expedition, July 9, 1926, BP folder 4327.

4. In *Skyward*, Byrd stated that he had a transatlantic flight on his mind during the return to New York from Spitzbergen: "When we hoisted anchor at Spitzbergen after the North Pole flight I turned to Bennett and said 'Now we can fly the Atlantic.'" Richard E. Byrd, *Skyward* (New York: G. P. Putnam's Sons, 1928), 222.

5. See BP folder 4282. On this national tour, Bernt Balchen studied the speed and fuel consumption of the *Josephine Ford* and reached his conclusion that the plane could not have reached the North Pole in the time Byrd reported.

Wanamaker had commissioned in 1914, and that its destination be France, where Wanamaker had once lived.<sup>6</sup> Byrd was responsible for planning the flight and selecting the airplane and the crew. He also raised money for the venture by selling stories to newspapers.

Wanamaker was not the only supporter of his earlier expeditions whose backing or participation Byrd solicited for his transatlantic attempt. Once again he chose Floyd Bennett to be the pilot. Lieutenant George Noville would be his engineer. Malcolm Hanson, who had worked so long on radio communications on the USS *Chantier*, designed a special radio set for the *America*. Doc Kinkaid, the mechanic for the *Josephine Ford*, assisted with the engines of the *America*. Finally, the National Geographic Society aided Byrd by providing the services of its chief cartographer, Albert H. Bumstead, inventor of the sun compass. (Byrd had made the first field use of this instrument during the 1925 Greenland expedition.)

In choosing a plane, Byrd again turned to a Fokker trimotor. Because Wanamaker was willing to pay for a new plane, Byrd was able to work with Anthony Fokker at his plant in New Jersey in designing and testing the airplane to which he would be entrusting both his life and his reputation. Many innovations were made in the interests of safety. For example, Byrd designed a special valve that allowed the crew, in the event of a disaster, to dump gasoline from the engines quickly. Bennett added a cutoff switch that would shut down all engines simultaneously if a crash landing and fire seemed imminent.

6. Byrd, *Skyward*, 222–50.

Another safety feature that in retrospect seems foolish was catwalks on the outside of the airplane. While the plane was in the air, the crew could in theory attend to any mechanical difficulties by hanging onto the catwalks and braving the wind and the cold.

Byrd saw to it that a luminous coating was applied to the plane's instruments so that they could be read even if the lights failed, and he prepared for the dangers posed by the weather by employing a meteorologist, as he had for the North Pole flight. The U.S. Weather Bureau assigned Dr. James H. Kimball of its New York office to make weather predictions, and for the first time in history, regular weather maps for aviation were made of the North Atlantic.

Byrd even had a special runway designed and built for the *America* at Roosevelt Field on Long Island, which Wanamaker had leased. A large, three-engine airplane needed a longer, smoother runway to reach the fast ground speed that would make the takeoff safer. To increase the plane's speed during taxi and takeoff without consuming extra fuel, Byrd had a hill built at the beginning of the runway.

All these measures reflected Byrd's characteristically careful organization, but he was also determined to advance the development of commercial transatlantic air service, for which safer planes would be a *sine qua non*. In addition, potential users of such a service had to be able to see that airplanes could carry more than just a pilot, a navigator, and the cargo they would need.

Consequently, the *America* was not designed with a heroic flight by a solo pilot in mind. It would carry a crew of four

and some eight hundred pounds of emergency equipment and cargo. Its stores included a kite for a wireless antenna if the plane landed on the ocean (the kite could double as a sail), two rubber rafts, enough food for three weeks, and special machinery to distill water. The *America* also carried a mailbag containing the first official transatlantic airmail.

Despite all the safety precautions, a spectacular accident marred the *America's* first test flight, on April 20, 1927. Anthony Fokker himself was piloting the new plane, and Bennett, Byrd, and Noville were passengers. During the landing, the airplane hit the ground nose first and somersaulted on its back. Although the damage to the *America* was not irreparable, Bennett suffered such serious injuries that he had to withdraw from the project.

Byrd's setback worked to his rivals' advantage. The first to fly across the Atlantic would be seen as a hero and become a national celebrity. Cash as well as fame awaited the winner. In 1925 Raymond Orteig, the owner of a hotel in New York, renewed his offer of a \$25,000 prize for anyone who would fly "from Paris or the shores of France to New York or from New York to Paris or the shores of France, without stop, within five years from June 1, 1925," which he had first announced in 1919.<sup>7</sup> Byrd, however, insisted that his team was not in competition for the prize. As early as March 28, 1927, the America Trans Oceanic Company issued a statement to the press that its goal was to "help the progress of aviation" and that "Mr. Wanamaker is simply trying to assist aviation progress and is even

7. "The Raymond Orteig \$24,000 Prize," BP folder 4357; Richard Montague, *Oceans, Poles and Airmen: The First Flights over Wide Waters and Desolate Ice* (New York: Random House, 1971), 26–27.



Byrd being sworn in as an official mail carrier by the U.S. Post Office Department.  
(BP, folder 7747)

more anxious than we are to dissociate our proposed effort from any commercial aspect and so we will avoid advertising any particular organization or any commercial product."<sup>8</sup>

Before the *America* was ready for another attempt, two rivals in two single-engine planes landed at Roosevelt Field for the transatlantic journey. One was Charles Lindbergh, an air-mail and stunt pilot, in *The Spirit of St. Louis*. The other was Clarence Chamberlin, in the *Columbia*. Byrd, perhaps remembering his own frustrations with the Norwegians at Spitzbergen, generously offered the use both of his specially designed runway and of his meteorological service. His mechanic, Harry Kinkaid, even tuned Lindbergh's engine and checked Chamberlin's—as Balchen had aided the *Josephine Ford* in Spitzbergen in 1926.<sup>9</sup>

On May 20, Charles Lindbergh was the first to leave Roosevelt field. The next day, while Byrd, with his crew and his sponsors, christened the *America* in a public ceremony, he received the news that "Lucky Lindy" had landed safely in France.<sup>10</sup> On June 4, Clarence Chamberlin and his financier, Charles Levine, took off in the *Columbia* and reached Berlin.

8. Statement for the morning papers, March 28, 1927, BP, folder 4343. Letters in the file indicate that Byrd genuinely feared that Wanamaker would withdraw his sponsorship if the expedition appeared to be seeking commercial advantage or gain.

9. Montague, *Oceans, Poles and Airmen*, 84.

10. After Lindbergh's flight, Byrd did try in vain to change the direction and destination of his flight from France to Hawaii. See Commander Richard E. Byrd to Rodman Wanamaker, May 23, 1927, BP, folder 4344. Wanamaker, however, was adamant about flying to France. Still, Byrd persisted, proposing on June 17 that if the weather was favorable to "touch our wheels at Paris" and continue to



Many in the public and the news media criticized Byrd for an overcautiousness that lost him "the race." Byrd maintained, however, that his goal was not to compete with single-engine aircraft but to demonstrate that the more sophisticated and much heavier three-engine aircraft could fly longer distances and transport more. In his view, single-engine aircraft had no commercial future in the area of transatlantic flight. He believed instead that the trimotor would become the standard.<sup>11</sup>

On June 29, 1927, more than two months after its disastrous test flight, the *America* soared off the special runway at Roosevelt Field. Aboard were Richard Byrd as navigator and George Noville as radio operator. The pilot who took Floyd Bennett's place was Bert Acosta, a well-known stunt flier and a naval reserve officer. The second pilot was Bernt Balchen, who had accompanied Byrd to New York after the North Pole flight and had become chief pilot and performance engineer for Anthony Fokker. From his time in the Norwegian air force, Balchen had experience in flying by instruments alone, which Acosta lacked.

Balchen's background proved critical, because the normally cautious Byrd decided to take a chance on the weather. Although reports predicted an imminent deterioration in the

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fly until nearly out of gas in order to demonstrate the cruising radius of the three-engine plane. See Commander Richard Byrd to Rodman Wanamaker, June 17, 1927, BP, folder 4344.

11. See Commander Richard Byrd to Anthony Fokker, October 11, 1926, BP, folder 4343, in which Byrd requests Fokker to develop and sell him a three-engine plane with a cruising range sufficient to cross the Atlantic. "I do not believe that I would like to try the Atlantic with a one motored ship." See also *Skyward*, 223-24.



An injured Floyd Bennett and Byrd inspect the *America*. (BP, folder 7748)

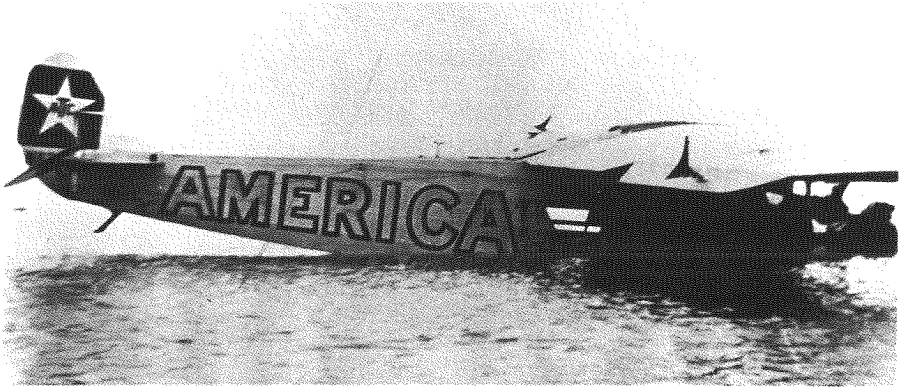
weather, Byrd felt that the time was ripe to show that the tri-motor could overcome at least some adverse conditions. For much of the trip, they encountered rain and fog. Then a dense fog over Paris made navigation difficult and landing dangerous, especially after darkness fell. Instead of landing in Paris,



Reporters and photographers surrounding Byrd's plane, the *America*, before its takeoff for the 1927 transatlantic flight. (BP, folder 7744)

the *America* turned back to the French coast in search of a lighthouse and a stretch of water to land in. The crew dropped navigation flares from the plane, and with their aid Balchen was able to make a safe water landing. The long flight—forty-two hours—had ended. Byrd, Balchen, Acosta, and Noville rowed to shore in one of the plane's rubber rafts, then walked to the village of Ver-sur-Mer, near Caen in Normandy.

Even though Byrd and his men were the third to fly to Europe from New York and the second to reach France, they met an enthusiastic public. Byrd wrote, "The wild scenes of joy and welcome which we received wherever we went in France are far beyond my power to describe. When we arrived in Paris, it was a long time before we could get away from the station. The entire city seemed to have turned out to welcome us. . . . The glass in one of our automobiles was broken, and the machine in which I was riding was almost upset several times by



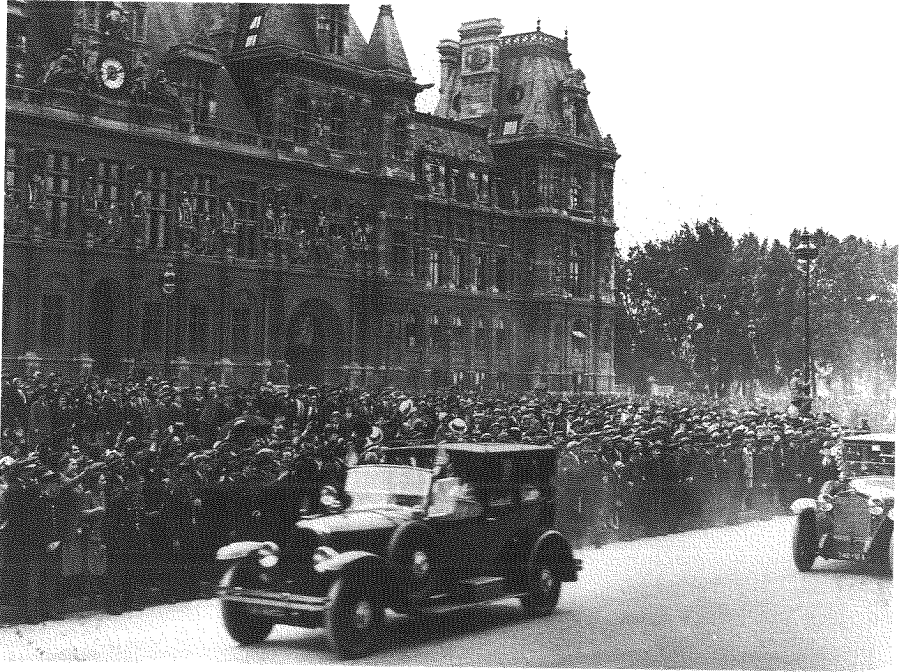
Emergency landing of the *America* off the coast of France. (BP, folder 7744)

the crowds that surged against it. Some of the people must have been crushed and injured, but they did not seem to mind.”<sup>12</sup> In New York City, Byrd became the first hero ever to receive a second ticker-tape parade.<sup>13</sup> More honors awaited Byrd and his crew, and they were inundated with invitations and interviews. The transatlantic flight marked another milestone in the career of Richard Evelyn Byrd.

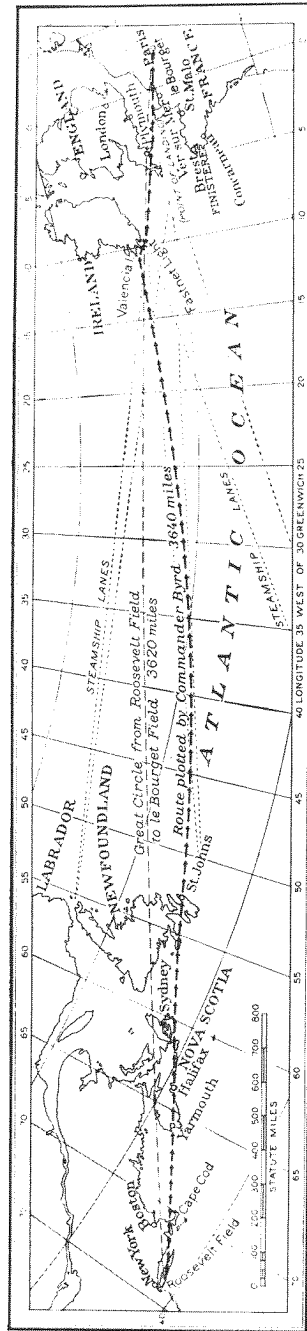
The entries Byrd made in his notebook appeared in part in his book *Skyward* and in an article he wrote for the *National Geographic*. The complete transcription starts on p. III.

12. Richard E. Byrd, “Our Transatlantic Flight,” *National Geographic Magazine* 52, no. 3 (September 1927): 366–67.

13. Eugene Rodgers, *Beyond the Barrier: The Story of Byrd's First Expedition to Antarctica* (Annapolis: Naval Institute Press, 1990), 12.



Victory parade for Byrd and his crew in Paris. (BP, folder 7751)



Map of Byrd's transatlantic flight. (Courtesy of the National Geographic Magazine)

[June 29, 1927]<sup>14</sup>

Left 4.25 standard [Eastern Standard Time]  
4:29 altitude 300 feet turning. After turn completed 400.  
Raining slight.

5:50

Altitude 2200 feet. Not so much vibration now. Well beyond Cape Cod. Still visible few ships. Few ships. Cold. Having quite [a] time keeping Bert [Acosta] on course. Balchen still aft with us. Cans [of] gas affect standard compass. Must get them out of way soon.

As I looked through our trap door passing north of Halifax a cl[oud] was under us and the shadow of the America on the cloud had a beautiful rainbow around it.

Oil leak near [illegible]. Leak fixed with glue.

Sometimes have difficult time attracting attention ahead [from other crew members] to send radio or change course. Lights don't work so well. Found a long stick and hit Noville on shoe with that.

Went forward at 3:15 to pilot. I got caught in passage way.

For ten hours we have seen no land or water. It's now ten A.M. I sit here wondering if the winds have been with us. If they haven't we don't reach land.

14. In the original diary, the diary entries follow the chart. The order has been reversed here for clarity. The original diary pages concerning the flight begin "January 16, 1925"—actually June 29, 1927.

I take my hat off to the boys with me. Their courage is marvelous.

*[From Flight Chart recorded in diary, June 29, 1927]<sup>15</sup>*

5:00 [A.M.] Raining thick. Average altitude 40000

6:00 Still drizzling.

6:30 Wind shifting clockwise; nearly behind us. Wind on surface from S.W.

7:00 E. [illegible]. Compass seems out and gas cans are affecting STD Compass not so good.

7:30 At this lower altitude find drift to left changing clockwise

8:00 Are keeping altitude for safety rather than speed at this time.

10:[00] Just passed Labrador Bay. Fog covers area to right.

12:00 Looks like 103 mph ground speed. Thought of NC boats flight [the 1919 crossing] when passed Halifax.

15. Pages concerning this flight in the diary run from January 16, 1925, through January 28, 1925.



2:00 Cans of gas are now all used. Must get gas check.  
See land to left.

5:30 Thick fog for nearly hour. Can hardly see wing tips.  
Can't navigate.

6:30 Impossible to navigate. Wonder how long this  
will last.

7:30 Impossible to navigate. Situation terrific.

8:30 Impossible to navigate.

[June 30, 1927]

12:30 Dawn is here very beautiful over the horizon.<sup>16</sup>

2:00 Clouds are right up to us. Nothing seen below for  
10 hours.

3:30 Ice began to form.

5:00 Dense fog that can't climb out of. Terribly danger-  
ous. No water yet.

5 (?) [*sic*] Haven't seen water or land for 13 hours.

16. The time recorded in the log is Eastern Standard Time. Therefore, "dawn" near Europe at 12:30 a.m. is reasonable, because the local time was about 5:30 a.m.



9:00 Can see water now

10:30 Things at last are pleasant.

12:30 Taking longer than I thought to get to land.

[The photographs that follow show the diary pages on which Byrd recorded the *America's* transatlantic flight.]

16  
Jan. 16

FRIDAY, JANUARY 16, 1925

Rem

Running Y-buck  
average of 4000 wms. per day  
for the first 2 1/2 hrs. in the  
am. - 5000  
wind putting clockwork  
ready behind us wind on east  
E.D. compass working fine  
and for com. are adjusting  
old compass out in front  
at the same act  
find but to left of log  
last wire  
keep from alt. 10  
safety valve from  
speed at the time  
from take 15 1/2 g. cut  
by com. very high  
about like 100 in the  
thing out of the boat, kept  
when turned fuel tank  
com. 2 gms. also ran  
all water  
must get for each 200 gms  
water

1925

Cloud

low  
low  
cloud  
cloudy  
clear  
clear  
Sun  
but  
Sun  
clear  
cloud  
clear  
clear

57  
Fms

5  
6  
630  
17  
730  
8  
10  
12  
30  
330

mi

88  
142  
198  
235  
252  
326  
495  
678  
836  
944  
1006

SATURDAY, JANUARY 17, 1925

83 1/2 SW  
77 1/2 " SW  
80 1/2 " SW  
80 1/2 " SW  
84 1/2 " SW  
84 1/2 " SW  
88 1/2 SW  
95 1/2 SW  
103  
106  
110

17, 1925

64  
58  
56 1/2  
60  
62  
62  
55  
56  
67  
68  
64

14,000

14,000

accounting

8000  
8500  
8500  
8500  
8500  
8500  
8200  
8100  
8000  
8000  
8000

8. 19  
Jan. 19

SUNDAY, JANUARY 18, 1925

Impossible to navigate - winds  
how long this will last

Impossible to navigate  
situated in Keishe  
impossible to navigate.

Dawn is here very  
beautiful over the mountain  
clouds that are right up to the  
nothing seen below 10.10 hours

Ice began to form

Game for that count closed  
out of range of paper

Time M. 11	Sea 1080	Sea 1130	MONDAY wind light	JANUARY 19, 1925 Temp 68	Wind 5600	clouds 19
7.30	1147	113		62	6400	6000 feet
8.30	1136			60	7000	5000 ft.
11	1416	113		66	5000	game fog
12	1450	113		64	6000	game fog at 6000
12.30		113		64	6000	game fog
2	1603	113		64	6800	still fogged
3.30		113		54	9400	still fog & cloud
4		113		52	10000	cloud or fog
6		113		36	11000	cloud or fog

20  
Jan. 20

THURSDAY, JANUARY 20, 1925

Have not seen water on land for 13 mi  
can see water now

Threat of frost and pleasant weather  
Taking traps from the lot to get a land

Time	air temp	Wind	WEDNESDAY, JANUARY 21, 1925	21 Jan. 21
5:00	18.50	113	54	9:00 frost
9	21.70	105	75	3:00 cloudy
10:30	23.19	105	60	5:00 cloudy
12:30	23.95	105	44	24:00 cloudy

# Epilogue

RICHARD EVELYN BYRD,

1928-1957

**B**YRD'S ACCOMPLISHMENTS AT THE NORTH Pole and in crossing the Atlantic established him, along with Charles Lindbergh, as one of the much celebrated heroes of his time. Songs and poems were written in his honor, and some parents even named their children after him.

But Byrd's adventures did not end with his transpolar and transatlantic flights. He used the events of 1926 and 1927 as the foundation for a long career in exploration and scientific discovery in Antarctica. As early as 1925, he had predicted that airplanes would be the instrument of choice for exploring Antarctica as well as the Arctic.<sup>1</sup> Byrd exploited his heroic status to gain support for five expeditions to Antarctica. These expeditions created a lasting scientific legacy and led to an enduring

1. Richard E. Byrd, "Flying over the Arctic," *National Geographic Magazine* 48, no. 5 (November 1925): 519.

American presence on that continent. In the days before the advent of government sponsorship of polar exploration, Byrd obtained all the necessities for two expeditions and part of a third by lecturing and soliciting donations of cash, equipment, and supplies.

Besides raising money, Byrd also put his organizational skills to use in assembling explorations. His expeditions always involved enormous logistical challenges. In their day they were the largest expeditions in the history of Antarctic exploration. In his first two—privately financed—expeditions the burden of organizing and planning rested squarely on Byrd himself, not on a committee or a government agency.

Byrd's expeditions to Antarctica were more elaborate than their predecessors. Each expedition stayed in Antarctica for roughly two years. In addition to the traditional dogs and dog-sleds, they involved extensive use of aircraft, radio, motorized vehicles, and advanced scientific equipment. In many ways, Byrd's first two expeditions introduced the mechanical age to Antarctic exploration. Those that succeeded him, which were governmentally sponsored, ushered in the bureaucratic era.

By 1928 Byrd had raised enough money to buy two ships and three airplanes for his first trip to Antarctica. A crew of volunteers joined him. Some, like Bernt Balchen, Pete Demas, and George Noville, had been with him since Spitzbergen in 1926. A new member was Paul Siple, a Boy Scout who had won a national competition to accompany Byrd. Siple accompanied all of Byrd's Antarctic expeditions and became a distinguished scientist himself.

The expedition established a base camp, "Little America," at the Bay of Whales, near where Roald Amundsen had begun

his journey to the South Pole. A total of forty-two men, the largest expedition ever to have spent the winter in Antarctica, stayed there until the group returned to New York in 1930.

Byrd's first expedition accomplished much. In November of 1929, Byrd, with two pilots, Bernt Balchen and Harold June, and an aerial photographer, Ashley McKinley, flew a three-engine Ford airplane, the *Floyd Bennett*—named for Byrd's pilot in the 1926 North Pole flight, who died in 1928—over the South Pole. Another important but less spectacular achievement was the groundbreaking work of Byrd's second-in-command, the scientist Dr. Larry Gould. For three months, Gould and his party traveled to the Queen Maud Mountains to explore their geological history. Other important scientific work included the discovery of the Ford and the Rockefeller Mountains, magnetic observations, and ground surveys of the Bay of Whales, as well as the gathering of zoological specimens for the American Museum of Natural History in New York.<sup>2</sup>

Returning once again as a hero, Byrd was successful in drawing attention to himself and to Antarctica. Russell Owen published a prize-winning book about the expedition. Paramount Pictures released *With Byrd at the South Pole*, a movie about the expedition that continues to inform and entertain today. Byrd, of course, lectured, gave interviews, and published a book about the expedition, *Little America*. Even Byrd's dog

2. Kenneth J. Bertrand, *Americans in Antarctica, 1775–1948* (New York: American Geographical Society, 1971), 293–95; Eugene Rodgers, *Beyond the Barrier: The Story of Byrd's First Expedition to Antarctica* (Annapolis: Naval Institute Press), 211–21. The most detailed account of this expedition is found in Richard E. Byrd, *Little America* (New York: G. P. Putnam's Sons, 1930).





Byrd and his dog Igloo, a terrier who accompanied Byrd on his expeditions to both North and South Poles. (BP, folder 7641)

Igloo, who had been with him at Spitzbergen and Little America, became a celebrity, had a book written about him, and was mourned nationally when he died in 1931.

Promoted by an admiring Congress to the rank of rear admiral, Byrd turned his energies to continuing the work of

exploration and scientific discovery in Antarctica. During the Great Depression, however, the importance of exploring Antarctica was minimal to people whose receipt of a paycheck was in doubt. Under these economic conditions, raising money for airplanes, ships, and supplies was very difficult.

Nevertheless, Byrd succeeded. Aside from gifts of equipment and supplies, contracts with news and film media, and donations from individuals and organizations such as the National Geographic Society, Byrd found two unusual ways of financing his second expedition. First, he made an arrangement with the U.S. Postal Department that enabled him to raise money by setting up a post office at Little America II and selling postal covers. Second, he and CBS Radio signed a lucrative contract with General Foods, the maker of Grape Nuts and other cereals, to broadcast directly from Little America II to the living rooms of average Americans. The first broadcast took place on February 1, 1934, and weekly broadcasts followed. By these means, Byrd obtained sufficient financing to afford three airplanes, two ships, and enough supplies for fifty-six men to stay in Antarctica for two years.

The drama of the expedition was Byrd's nearly fatal adventure at a weather station, Bolling Advance Base, that he established 123 miles into the interior of Antarctica. The scientific purpose of the base was to measure meteorological activity away from the coast of Antarctica for the winter season and to observe auroral phenomena. Both were to be original contributions to scientific knowledge.

Another purpose of the weather station, however, was to raise interest in the expedition, both among the general public and at Paramount Pictures specifically. Like many other businesses, Paramount suffered financially during the Great

Depression and was reluctant to invest in what would be only a sequel to the documentary film they had made of Byrd's first expedition—and without the drama of covering the first flight across the South Pole. In June 1933 Byrd wrote Emanuel Cohen of Paramount to persuade him that there would be sufficient drama on the expedition to warrant the studio's investment. He assured Cohen that the second expedition would face more ice, do more flying, and create more news than the first expedition. Swearing Cohen to secrecy, Byrd wrote, "The point that I want to make clear with you is that I will go to infinite pains to get the proper kind of a movie. It is one of the ways that I can keep from being a bankrupt. When I went down before [the first expedition] I did not understand the importance of giving the movie men more of a chance than I did. . . . You will find plenty of drama this time . . . from the fact that two men will spend the winter night at the foot of the mountains only 300 miles from the Pole, where the temperature will be, as I have said, as low as 90 degrees [below zero]."<sup>3</sup>

According to Byrd's account in *Alone*, published after the expedition, he had planned to have three men spend the winter in a hut in the interior of Antarctica. The hut, which had been designed for speedy transport and construction, was only nine by thirteen feet with an eight-foot ceiling made of wood and insulation. It was sunk into the snow so that winds could not pierce the interior; trap doors and tunnels made it possible to reach the surface, and a ventilation shaft provided fresh air. In addition, Byrd saw to it that a "hurricane deck" made of bamboo sticks with orange flags surrounded Advance Base, so

3. Richard E. Byrd to Emanuel Cohen, June 1, 1933, BP, box 59, folder 2673.

that the men could take daily walks without the risk of being lost in blinding snow.

When the expedition reached Antarctica, however, storms and breaking ice slowed the unloading of supplies at Little America. According to Byrd, there was not sufficient time left to haul enough supplies for three people to Advance Base, and he decided to winter in the interior by himself. This decision aroused much controversy among his men, his sponsors, and his family because it appeared that circumstances were forcing him to put himself at needless risk. In fact, there is reason to believe that Byrd had planned to be alone even before the expedition left Boston. The letter to Cohen said that there would be two men in the hut, but in all of Byrd's accounts published later, he denied that the plan had ever been for two men. Byrd feared that two people in isolation would develop a dangerous hostility toward each other that three would not. But if the plan had indeed been for three people, why did Byrd not say so to Cohen? Perhaps he had always intended to be alone in the hut but feared to reveal this to his financial sponsors before the expedition began. Paramount would certainly have been fearful of their "star" putting himself at risk.

According to *Alone*, Byrd looked forward to the experience of a winter of solitude. The time would allow him to read the extensive library he had brought with him, make original contributions to science by collecting data every day, and free him from the details of coordinating activities at Little America. He assured Marie that he would do nothing to put himself into danger: "I realize this may worry you considerably but if you knew how I had planned the whole thing, I don't believe you would be worried. It seems utterly selfish of me to subject you to this

apprehension after all the apprehensions of the past, but I pray you will be able to overcome it as you have overcome all difficult things that have come your way. . . . I swear to you that I will be more careful than I have ever been, as careful as it is humanly possible. It is my faith in your poise and great strength that makes it possible for me to do this thing.”<sup>4</sup>

On March 28, 1934, Byrd began his adventure in solitude at Advance Base. Only a schedule of wireless broadcasts from Advance Base to Little America connected him with others. By June 1, he realized that his sleepiness, exhaustion, and lack of appetite were evidence of carbon monoxide poisoning. So bad were his circumstances that he wrote notes to his family and stored them in a metal box. The notes were to be read only if he did not survive, just as in 1926 he had written to his son in the event of his death at the North Pole. On June 4, Byrd recorded in his daily log of aurora observations an entry that spanned five days and said, “My physical condition has been very desperate.”<sup>5</sup> He attributed the carbon monoxide to his stove, his sole source of heat. The drama that became the book *Alone* was whether Byrd could survive long enough for a rescue party to reach him through the hazards—the storms, the cold, the darkness, and the crevasses—of the Antarctic winter. Finally, a rescue party reached Byrd on August 11 and nursed him back to health. They warmed themselves at the stove; the actual source of the carbon monoxide was probably the generator Byrd used to send his wireless transmissions.

4. Radiogram, Richard Byrd to Marie Ames Byrd, undated (1934). BP, box 148, folder 5452.

5. Notebook, May 30 to June 4, 1934. BP, box 85, folder 3685.

Aside from the drama surrounding Byrd, the expedition was significant for the number of discoveries made by the scientists and other members of the team. They discovered the Rockefeller Plateau, established the limits of the western mountains of the Ford Ranges, and mapped many new peaks of the Queen Maud Mountains. Scientists uncovered fossils, made observations of the intensity of cosmic rays, studied the life history of the Weddell Sea, and collected species of moss and lichens.<sup>6</sup>

After returning to the United States in 1935, Byrd never wintered again in Antarctica, but polar exploration remained a focus of his life. His fame and popularity enabled him to raise some money for another expedition to Antarctica even in the bleakest years of Great Depression. This time, however, the federal government pitched in as well. President Franklin Roosevelt—who had befriended Byrd as early as 1919 when Byrd was involved in the U.S. Navy’s transatlantic expedition and Roosevelt was assistant secretary of the Navy—concluded that the United States had a national interest in establishing a presence in Antarctica. Because other nations had also been active there, he felt that the United States needed a permanent presence in Antarctica to protect its claims.

With Roosevelt’s support, the United States Antarctic Service took shape, drawing on the resources of the Departments of State, of War, and of the Interior, and on the Navy. Byrd led the expedition, combining his funds and his staff with those of

6. Bertrand, *Americans in Antarctica*, 316–19. The most detailed account of this expedition is given in Richard E. Byrd, *Discovery* (New York: G. P. Putnam’s Sons, 1935).

the new Antarctic Service. The expedition's goal was to establish two bases, East Base and West Base, that would be maintained by a wintering party of fifty-nine people.

Like Byrd's previous expeditions, this one included both ships (two) and airplanes (four). A particularly noteworthy feature of the expedition was the "Snow Cruiser," a mobile scientific base that included a laboratory, living quarters, and a small airplane. It was designed to stretch the limits of scientific investigation, but unfortunately the heavy vehicle was poorly suited to the variety of snows found in Antarctica.<sup>7</sup>

In 1940, the war in Europe ended the Antarctic Service and the attempt to establish a permanent presence in Antarctica. But much had been accomplished. Aside from geographical exploration, the scientific side of the expedition had included observations of the aurora australis, cosmic rays, and meteors, as well as investigations in geology, glaciology, geophysics, terrestrial magnetism, botany, zoology, oceanography, and meteorology.

But the short-lived Antarctic Service was perhaps most important for having reestablished the precedent—originally set by the Wilkes expedition of 1840—for government sponsorship of Antarctic expeditions. Since 1940, with the sole exception of the privately financed Finn Ronne expedition of 1947, governmental agencies and departments have shaped the direction and the extent of Antarctic exploration and scientific investigation by the United States.

7. Bertrand, *Americans in Antarctica*, 407–13. An informative and entertaining account of the expedition is Charles F. Passel's *Ice: The Antarctic Diary of Charles F. Passel* (Lubbock: Texas Tech University Press, 1995).

During World War II, Rear Admiral Byrd returned to active duty in the Bureau of Naval Aeronautics of the U.S. Navy. In 1942, he was assigned the duty of inspecting islands in the South Pacific as potential sites for air bases from which to attack Japan. Later, he continued his inspections, but now with the objective of plotting air routes for commercial aviation.

When the war ended in 1945, Admiral Byrd once again took up his interest in the exploration of Antarctica. The Cold War pitted the United States against the Soviet Union throughout the world, including Antarctica. To the U.S. Navy, Antarctica seemed a safer place than the Arctic to test military equipment and tactics that could be used against the Soviets in a polar environment.

Operation High Jump, the fourth expedition to Antarctica in which Byrd had a prominent role, began in 1946 and ended in 1947. Byrd was the "officer-in-charge" and had technical control of operations in Antarctica. Because this was a naval operation, however, the actual command went to an active officer, Rear Admiral Richard H. Cruzen, who had participated in the U.S. Antarctic Expedition of 1939-41. Operation High Jump was principally a military exercise that used large numbers of naval vessels and aircraft to chart and take aerial photographs of a vast area of Antarctica. It involved approximately forty-seven hundred naval and marine personnel and forty-four civilians (scientists, observers, and reporters), thirteen ships, twelve airplanes, and a helicopter. This ambitious expedition saw the first loss of life in any expedition associated with Byrd: a plane crashed in bad weather, and three naval airmen died.

Operation High Jump was brief, but it made impressive



Programs since October 21, 1955, and for his contributions to Antarctic expeditions and to the development of permanent Antarctic legislation and international scientific understanding and good will.

Richard Evelyn Byrd died at his home in Boston on March 11, 1957, but his work left many legacies. After his death, Operation Deepfreeze continued to provide logistical support to scientific investigations in Antarctica, and these have contributed much to our understanding of the earth as a global environmental system. Byrd, through his status as a celebrity, attracted money and attention to the exploration of this remote and inhospitable area. His organizational skills and his willingness to test new technologies—airplanes, aerial photography, and radio communication—helped open polar environments for investigation and discovery. Finally, the scientists whom Byrd engaged on his expeditions not only made their own contributions but also became the teachers of generations of scientists who continue to visit Antarctica.

As one scientist recalled, “Although a complex and many-faceted personality, he [Byrd] was not a scientist and never claimed to be one. He became the superlative organizer and visionary generalist who made a continent safe, nearly, for specialists, in his own time and onward. The Antarctic Continent is now by far the largest area on the planet dedicated as an international scientific reserve and peace park. It was the work of Byrd and his multinational associates there, some famous, most obscure, which in large measure made this outcome possible.”<sup>10</sup>

10. Alton A. Lindsey, “Inside Byrd’s Second Antarctic Expedition,” unpublished manuscript, Alton A. Lindsey Papers, Byrd Polar Research Center Archival Program, The Ohio State University, Columbus, Ohio.

# Appendix A

## CHRONOLOGY OF BYRD'S LIFE

- 1888, October 25      Born at Winchester, Virginia, son of Richard Evelyn Byrd and Eleanor Bolling Flood.
- 1904–7                Attended Shenandoah Valley Academy and Virginia Military Institute.
- 1907–8                Student at University of Virginia.
- 1908–12              Cadet at U.S. Naval Academy.
- 1912                    Assigned first to USS *Kentucky* on July 12, then to USS *Wyoming* on September 25.
- Accident aggravates earlier athletic injury.
- 1913, September      Reassigned to USS *Missouri*.
- 1914                    Assigned to USS *Washington* during Mexican War.
- Rescues two seamen from drowning. (Awarded Congressional Life-Saving Medal in 1922.)
- Takes first flight on an airplane.
- 1915                    Assigned to USS *Dolphin*, yacht of the secretary of the Navy.
- 1915, January 20      Marries Marie Ames of Boston.

- 1915 (*cont.*) Assigned to Presidential yacht, USS *Mayflower*.
- 1916, March Requests retirement from active duty.
- 1916, May Appointed administrator of Rhode Island's naval militia.
- 1917 Appointed, as a retired officer on active duty, to Bureau of Naval Personnel in Washington, D.C.; serves as Secretary of the Commission on Training Camps.
- 1917, August Becomes a naval aviation cadet at Pensacola.
- 1918, May Receives pilot's wings and becomes assistant superintendent at Pensacola, with responsibility for instruction in navigation and for investigating plane crashes.
- 1918, July Proposes flying NC-1 aircraft across Atlantic; goes to Halifax to establish refueling stations for transatlantic crossing. (Experiment ends with the end of the war.)
- 1919, February 6 Assigned to newly created Transatlantic Flight Section.
- 1919–20 Involved in setting up Navy Bureau of Aeronautics.
- 1921 Navy rejects Byrd's plan for transatlantic flight and sends him to England to help navigate a dirigible to the United States. Byrd misses train and loses his space on the airship, the ZR-2, which exploded.
- 1922 Becomes responsible for creating an air station in Massachusetts to train reserve pilots.

- 1924 Travels in Midwest to organize naval reserve units.
- 1924, January Ordered to assist in planning the flight of the dirigible *Shenandoah* over North Pole (*Shenandoah*, damaged in storm, does not make flight).
- 1924, June Receives congressional promotion to rank of lieutenant commander, inactive.
- 1925, August Participates in Arctic expedition with Professor Donald MacMillan, with planes from Navy and Navy volunteers and financing from Edsel Ford and John D. Rockefeller.
- 1925, August 22 Expedition, which did not cross North Pole, returns. (MacMillan opposed to Arctic flights.)
- 1926, April 3 Byrd's expedition to fly across North Pole begins.
- 1926, May 9,  
12:30 A.M. Byrd takes off for North Pole, with sun compass, wind-drift measure, and bubble sextant as navigational aids; claims to have reached pole at 9:02 A.M.
- 1926, December Congress promotes Byrd to rank of commander and awards him the Congressional Medal of Honor.
- 1927, April 20 Crash of the *America*, which Byrd later used for his transatlantic crossing, on its first test flight.
- 1927, June 29-30 The *America* takes off from Roosevelt Field, crosses the Atlantic, and makes a successful water landing off the Normandy coast.

- 1928, September      Byrd's first expedition to Antarctica begins.
- 1929, November 29    Byrd flies to South Pole.
- 1930                    Expedition returns to the United States from Antarctica; Congress promotes Byrd to rank of rear admiral.
- 1933                    Byrd's second expedition to Antarctica begins.
- 1934, February 3     CBS Radio broadcast from "Little America" in Antarctica.
- 1934, March 28        Byrd begins nearly fatal winter stay at Bolling Advance Base.
- 1934, August 10       Party rescues Byrd at Advance Base.
- 1935, February 7     Expedition departs from "Little America."
- 1935-36,  
October-May          Byrd makes lecture tour to 156 cities throughout the United States.
- 1939, July 7          Official announcement of U.S. Antarctic Service expedition.
- 1939, November      Antarctic Service expedition (Byrd's third) begins.
- 1940, March            Byrd leaves Antarctica.
- 1942                    Byrd reassigned to Navy Bureau of Aeronautics.
- 1942, May-July        Byrd assigned to tour Pacific islands looking for sites appropriate for wartime air bases.
- 1943, September-October    Byrd tours islands in the east Pacific in search of suitable locations for postwar commercial airports.

- 1946 The U.S. Navy runs Operation High Jump in Antarctica, using thirteen ships and 4,700 men. Byrd is officer-in-charge but does not exercise actual command. (Byrd's fourth trip to Antarctica.)
- 1947, April Return of Operation High Jump forces from Antarctica.
- 1955-56 Byrd makes fifth and last trip to Antarctica in conjunction with Operation Deepfreeze and the upcoming International Geophysical Year (1957-58).
- 1957, February 21 Byrd is awarded the Medal of Freedom.
- 1957, March 11 Byrd dies in Boston at the age of sixty-eight.

# Appendix B

**NORTH POLE  
NAVIGATIONAL REPORT,  
1926**

REPORT OF SPECIAL COMMITTEE APPOINTED BY THE BOARD OF TRUSTEES OF THE  
NATIONAL GEOGRAPHIC SOCIETY TO EXAMINE THE RECORDS OF COMMANDER BYRD'S FLIGHT  
TO THE NORTH POLE, MAY 9, 1926

The Committee has examined the original records of Commander Byrd and found them to have been carefully and accurately kept. In the opinion of the Committee, these records substantiate in every particular the claim of Commander Byrd that on May 9, 1926, he reached the North Pole by airplane, thus being the first person to reach the North Pole by aerial navigation.

The Committee has had expert assistance in the examination of the records from Mr. Hugh G. Mitchell, Senior Mathematician of the U. S. Coast and Geodetic Survey, Mr. Henry G. Avers, Chief Mathematician of Geodesy of the Coast and Geodetic Survey, and Mr. Albert H. Bumstead, Chief Cartographer of the National Geographic Society. These experienced calculators have verified all of Commander Byrd's computations, devoting five consecutive days to the work; they have also critically examined the sextant used by Commander Byrd.

Their examination began at 10 a. m. on June 25 and was completed at 5 p. m. on June 28. The results of their examination are attached to this report.

Gilbert Hovey  
Frederick V. Coville  
B. Chester Jones

June 28, 1926



Dr. Gilbert Grosvenor, Dr. Frederick V. Coville, Colonel F. Lester Jones,  
National Geographic Society,  
Washington, D.C.

Dear Sirs:

We have the honor of submitting the following report of our examination of Lieutenant Commander Richard Evelyn Byrd's "Navigation Report of Flight to Pole". We have carefully examined Commander Byrd's original records of his observations en route to and from the North Pole. These records are contained on two charts on which Commander Byrd wrote his observations, made his calculations, and plotted his positions. We have verified all his computations. We have also made a satisfactory examination of the sextant and sun compass used by Commander Byrd.

The plane left Kings Bay, Spitzbergen, at 00 hour 37 minutes Greenwich Civil Time 9 May, 1926, passed the north end of Amsterdam Island at 1 hour 22 minutes G.C.T. headed north following closely the  $11^{\circ} 04'$  meridian of east longitude.

The dead reckoning position of the plane is given for hourly intervals, after leaving Amsterdam Island, and also at the times sextant observations were made. Ten sextant observations to determine the altitude of the sun were made, six at various intervals between Amsterdam Island and the Pole, and four while the plane was flying at the Pole. The accompanying chart shows the route and the positions when observations were taken.

Under the conditions of flying it is manifestly impossible to make more than one astronomical observation from any one point. A single astronomical observation does not give a location but only a line passing through the position of the observer. Such lines are called "Sumner Lines". If the latitude or longitude of the point of observation is known or its direction or distance from some known point, the position on a Sumner line may be determined.

In the present case we have both the direction and the estimated distance

from Amsterdam Island to give the position on the Sumner lines resulting from the sextant observations of the altitude of the sun.

The resulting positions obtained by using the direction may differ from those obtained by using the estimated distance. This is to be expected. The distances depend upon estimates of speed and estimates of speed depend upon the altitude of the plane obtained with an aneroid barometer. The barometer readings of altitude depend on the assumption that the sea level atmospheric pressure remains constant over the whole route of the flight, something which in ordinary latitudes rarely happens between points so widely separated. We do not know if these conditions are better in the polar regions. It is our belief, therefore, that estimates of speed may be subject to large errors. But the direction of flight from Amsterdam Island could be known with a comparatively high degree of precision as it depended only on the skillful use of two optical instruments, the drift indicator and the sun-compass, both capable of giving the direction within one degree. When these instruments were used almost continuously, as they were, it seems probable that the route flown followed closely the route planned, the deviations to the right tending to balance the deviations to the left.

Attention is called to the fact that the Sumner line determined at 4 hours 56 minutes, coinciding so nearly in direction with the direction of flight, gives a splendid determination of longitude and check on his steering at a point about midway of the flight; just as the one determined at the Pole and intersecting the course at an angle of about 56 degrees gives a good condition for the determination of latitude. The amount which the plane may be actually off the Sumner line is not affected by inaccuracies of steering, such as

enter into the holding the compass course, or determining and correcting for drift, but are wholly due to errors in the observed elevation of the sun. These elevations were determined with a sextant, in which the bubble supplies the horizon of reference, an instrument developed by Commander Byrd and in the use of which he was most skillful. An estimate of the error attending such an observation may be obtained by fitting the dead reckoning to the Sumner lines and by a consideration of the capacity of the sextant. From this evidence, it is believed that five miles, plus or minus, represents a reasonable estimate of the limits of this error, which is not accumulative, but is the same for all Sumner lines thus determined.

It may be noted also that in comparing positions determined at 8 hours 18 minutes, 8 hours 38 minutes and 8 hours 59 minutes, it becomes necessary to assume errors of only two minutes in the observed altitudes to bring them into full accord with the average speed between the determined positions. This would indicate that 5 minutes is a very reasonable limit to assign to the uncertainty of an observed altitude.

At 8 hours 58 minutes 55 seconds an observation of the altitude of the sun gave a latitude of  $89^{\circ}55.5'$  on the meridian of flight. This point is 4.7 miles from the pole. Continuing his flight on the same course and at the speed of 7 $\frac{1}{2}$  miles per hour, which he had averaged since 8 hours 18 minutes, would bring Commander Byrd close to the pole in 3 minutes 49 seconds, making the probable time of his arrival at the Pole 9 hours 3 minutes Greenwich Civil Time.

At the time Commander Byrd was close to the pole he estimated the moment of his arrival there at 9 hours 2 minutes. Our calculations differ from his estimate less than one minute during which time he would have flown about

one mile. From this it appears that he chose the right place to maneuver.

Flying his plane to the right long enough to take two sextant observations he turned around and took two more observations. These four observations confirmed his dead reckoning position of the Pole. He then attempted to fly his plane in a circle several miles in diameter with his pole position as a center.

Flying at and about the Pole at an altitude of 5,000 feet Commander Byrd's field of view was a circle more than 120 miles in diameter. The exact point of the North Pole was close to the center of this circle and in his near foreground and during more than two hours of his flight was within his ken.

Soon after leaving the Pole the sextant which Commander Byrd was using slid off the chart table breaking the horizon glass. This made it necessary to navigate the return trip wholly by dead reckoning. In accomplishing this two incidents should be specially noted. At the moment when the sun would be crossing the 15th meridian, along which he had laid his course, he had the plane steadied pointing directly toward the sun and observed at the same instant that the shadow on the sun-compass was down the middle of the hand, thus verifying his position as being on that meridian. This had an even more satisfactory verification when at about 14 hours 30 minutes G. C. T. he sighted land dead ahead and soon identified Grey Point (Grey Hook), Spitzbergen, just west of the 15th meridian.

It is unfortunate that no sextant observations could be made on the return trip. But the successful landfall at Grey Hook demonstrates Commander Byrd's skill in navigating along a predetermined course, and in our opinion, is one of the strongest evidences that he was equally successful in his flight northward.

The feat of flying a plane 600 miles from land and returning directly to the point aimed for is a remarkable exhibition of skillful navigation and

shows beyond a reasonable doubt that he knew where he was at all times during the flight.

It is the opinion of your committee that at very close to 9 hours, 3 minutes, Greenwich Civil Time, 9 May, 1926, Lieutenant Commander Richard Evelyn Byrd was at the North Pole, insofar as an observer in an airplane, using the most accurate instruments and methods available for determining his position, could ascertain.

Respectfully submitted,

*Hugh Mitchell*  
*Albert H. Bunstead*  
*Henry G. Spurr*

BYRD ARCTIC EXPEDITION  
S. S. CHANTIER

CONFIDENTIAL:

New York, N. Y.,

June 22, 1926

From: Lt. Comdr. R. E. Byrd, U. S. N., ret.  
To: Secretary Navy.  
Subject: Transmittal of navigation report of flight  
to the North Pole for the study of the  
National Geographic Society.  
Enclosure: Navigation report of flight to the Pole.

1. It is requested that the above mentioned report be transmitted as soon as practicable to the National Geographic Society in order that a study may be made of the navigation done on the flight to the North Pole by Byrd and Bennett May 9.

*R. E. Byrd*  
-----  
-R. E. BYRD-----

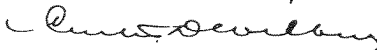
THE SECRETARY OF THE NAVY.  
WASHINGTON.

June 23, 1926.

My dear Dr. Grosvenor:

It is with great pleasure and satisfaction that the Navy Department transmits herewith the report of Lieut. Comdr. Richard E. Byrd, U.S.N., Retired, incident to his recent expedition by airplane to the North Pole.

Very truly yours,



Dr. Gilbert Grosvenor, President,  
National Geographic Society,  
Sixteenth Street at M, N.W.,  
Washington, D. C.

(encl) P/Si

## Navigation - Instruments and Methods Used.

1. Sextant. We used the artificial horizon bubble sextant in general use in naval aviation. This particular sextant was the one developed by myself for and used by the N. C. Boats on the first transatlantic flight. I also took it to England with me to use to help navigate the ill fated ZR2 back to the United States. I had it with me last year in the Arctic for our flight from Etah. In short I have had it with me for seven years and am very familiar with it and know it to be dependable instrument. I had adjusted it so that it had no error when using the bubble. The instrument has a barrel vernier so that it can be easily and quickly read. The bubble glass has three lines on it so that the sun can be more readily bisected by the middle line. There is therefore no semi diameter to apply. There is a saving of time in not having to apply semi diameter or error.
2. Drift indicator. The instrument we used was a drift angle meter made by the Pioneer Instrument Co., and in general use in the navy. It is a modification of the instrument developed by me from the Crocco instrument for the first transatlantic flight. This instrument is accurate to within a degree and on our polar flight we could get our drift almost exactly. We had a hole out in the floor of the cabin with three base plates for the indicator so that I could get the drift looking forward or aft. This turned out to be a very excellent arrangement. We had smoke bombs for drift but didn't need them. A stop watch and tables were used for getting the speed over the ground.
3. Chronometers. Used two torpedo boat chronometers which were the best of four. I had been getting their rate for many days and was certain of the time. One chronometer was 9 seconds fast and the other 21 seconds fast and with only a small fraction of a second rate per day.
4. Compasses. For navigating used two sun compasses, one attached to top of a trap door on top of the fuselage and the other movable so that it could be used at the windows of the cabin, where I had fore and aft lines drawn. The navigating magnetic compass was a large one with a six inch card, mounted on the after bulkhead halfway between the ceiling and the floor. In that position it had no deviation, which is important in the Arctic for the deviation sometimes is very large and extremely difficult to compensate for. The pilot had a periodic and an earth induction compass.
5. Short method astronomical navigation. Used Saint Hilaire with North Pole as assumed position and picked altitude out of nautical almanac taking advantage of the fact that for any given instant the altitude of the sun at the pole



is equal to the declination. This is a very quick and rather accurate method. When the line of position is long the curvature of the circle of equal altitude must be taken into consideration. Then the declination and correction of time are taken down before the sight, the actual calculations can be made on the line drawn graphically in two minutes. The p and r can be put down ahead of time when the altitude is known approximately. In connection with this graphical solution we used H. R. Publication No. 2560. This chart has a circle around the pole in degrees and minutes marked from the Greenwich. We marked the chart in hours so that the meridian of the true sun could be drawn instantly without changing the time to degrees of arc. We made our chart board amply large for this practice.

6. Our navigating cabin contains four windows and is large enough to navigate in comfort, being about six feet wide and twelve feet long. The drift and altitude could be taken without exposing the operator to the cold wind stream.

SECTION II

NAVIGATION-REPORT OF FLIGHT

7. Left King's Bay, Spitzbergen for North Pole at 00.37 Greenwich Civil Time May 9, in the Josephine Ford with about twenty one hours gasoline aboard. The weather was clear, barometer steady and temperature on the ground 14 degrees Fahrenheit. Bennett was at the wheel and Byrd navigating.

8. In approaching Danes Island bits of floating ice were seen below. Altitude about 2000 feet, a light breeze from the east. As we proceeded north the floating pieces of ice got more numerous.

9. Passed north end Amsterdam Island at 01.22 G.C.T. Altitude 2000 feet. Soon after leaving land we reached the edge of the Polar ice pack. The floes were not broken up to anything like the degree expected, and in several places the solid ice extended to the water's edge. Neither was it thought that the ice pack would end so near Spitzbergen.

10. Western edge of Amsterdam Island and high peak on Hoel Peninsula made excellent true north and south range. Lined the plane up very carefully on this range and checked sun compass and magnetic compass. The sun compass showed true north and the magnetic compass 11 degrees westerly variation. This was easily and quickly read since the compass had no deviation. Noted that the big compass was fairly steady when the plane was steady on a straight course.

11. It will be noted that the latitude of the northernmost point of Amsterdam Island is not correct when taken from the Hydrographic Office Polar Chart No. 2560. The correct latitude taken from a Norwegian and British chart is 79 degrees 48 minutes.

12. Wind continued from East but did not retard speed of plane which was making 77 nautical miles per hour over the ice. It was found that object could be found on the snow below to sight on as readily as over the land. Freshly frozen over leads, hummocks, pressure ridges, etc. On the transatlantic flight of the M. C. Boats we had been able to get the drift to within a degree on white caps below. Conditions on the Polar Sea were far better for sighting. I found that I could get the drift almost exactly and going north (when not piloting) I never let three minutes go by without getting the speed and drift. I felt entirely confident that, not considering the personal steering error, as long as we had the sun we could make good an almost exact course, and even a more exact course than a ship in a current for the drift can be obtained from instant to instant in a plane but a ship

cannot get its leeway in an ocean current except by astronomical observation. Then there is the error the surface ship has from swinging of the compass and some sluggishness. In an aeroplane that swinging is accentuated, but in the polar regions there is a far greater tendency for the magnetic compass to swing and the sluggishness is greater and it takes excellent steering to settle it down; and the course steered by it (even with the deviation and variation accurately known) may be in the general direction of the objective but it will not be an exactly straight one. The sun compass however swings only when the course is changed and the shadows on the pin, of course, responds instantly.

13. I checked Bennett on his course every few minutes with the sun compass and if I found him even slightly off his course I brought him back on it. Of course there is a tendency for steering errors to even up in the end but we did not want to take the chance of it not doing so. It was fortunate that we had two sun compasses for at times the shadow from the wings made the sun compass on the trap door useless.

14. There was another great aid to navigation. The re was not a "bump" in the air over the Polar Pack. The air was smooth and the plane gave a steady platform.

15. At 2<sup>h</sup>-22<sup>m</sup> G.C.T. an hour north of Amsterdam Island our dead reckoning position was lat. 81°-05' North long. 11°-04' East. We could still see the land clearly and as I had been able to check on our range for a long distance we were sure of this dead reckoning position. Our speed for this hour had been 77 miles per hour. I will use only sea miles in this paper.

16. I navigated during the next hour with all the care I was capable of. Bennett showed a tendency to keep too much to the right and I had to keep constantly after him but he soon settled down and steered with astonishing accuracy.

17. At the end of the second hour from Amsterdam Island, 3<sup>h</sup>-22<sup>m</sup> G.C.T. our dead reckoning position was lat. 82°-22.5' North long. 11°-04' East, average speed for hour 77.5 m.p.h.

18. The figures that follow in this paper were taken from my working chart but the descriptive letters preceding the figures were largely left out on the chart to save time. I want to call attention to the fact that the length of some of the degrees of latitude marked on the chart are inaccurate. This has a bearing on graphical solution of position.

At 3<sup>h</sup>-56<sup>m</sup>-24<sup>s</sup> Greenwich Civil Time took sextant observation. Sun 14° 57' -07". The sextant had no error. Took altitude sun's centre. Therefore had no semidiameter to apply. Used North Pole as assumed position and worked out graphically by Saint Hilaire method.

G.C.T.	=	3 <sup>h</sup> -56 <sup>m</sup> -24 <sup>s</sup>	Sext Alt.	=	14°-53'-08"
Eq.	=	3-36.6	p & r	=	(+) 33-28
G.A.C.T.	=	4 <sup>h</sup> -00 <sup>m</sup> -00.6 <sup>s</sup>	True Alt.	=	16°-53'-41"
			Dec.	=	17°-08'-12"
			Alt. Diff.	=	2°-14'-31"

True altitude is less than computed altitude therefore 2°-14'-31" is laid off from the pole away from the direction of the sun on the bearing of the sun at the instant of sight, which was easily located by the G.A.C.T. 4<sup>h</sup>-00<sup>m</sup> 00.6<sup>s</sup>. The line of position was drawn at right angles to the end of the intercept.

The dead reckoning position at time of sight 3<sup>h</sup>-56<sup>m</sup>-24<sup>s</sup> G. C.T. was long 11° -04' East, lat. 83° -10' North.

The line of position in this case was long enough to require applying the curvature of the circle of equal altitudes. This was done and the line crossed our line of flight a few miles ahead of the dead reckoning position. Of course I could not get a fix with the one line, but I knew that Bennett had steered three or four miles to the right off his course so I assumed that our true position was to the right and ahead of our dead reckoning position so I corrected for this roughly for I expected to get a true position by crossing the first line with a second one.

19. The average speed for the hour from 3<sup>h</sup>-22<sup>m</sup> G.C.T. to 4<sup>h</sup>-22<sup>m</sup> G.C.T. was 82.5 m.p.h. We were losing some altitude during this hour which increased our speed.

20. Our dead reckoning position at the end of the third hour from Amsterdam Island was 83° -45' lat. North long. 11° -04' East.

21. At 4<sup>h</sup>-56<sup>m</sup>-27<sup>s</sup> took sextant altitude of sun. Alt. 16° -43' -20".

G.C.T.	=	4 <sup>h</sup> -56 <sup>m</sup> -27 <sup>s</sup>	Sext Alt.	=	16°-43'-26"
Eq.	=	(+) 3-38	p & r	=	(-) 3-02
G.A.C.T.	=	5 <sup>h</sup> -00 <sup>m</sup> -05 <sup>s</sup>	True Alt.	=	16°-40'-24"
			Dec.	=	17°-08'-54"
			Alt Diff	=	28°-302"

to be laid off away from sun since dec. or computed alt.

is greater than observed altitude.  
 Dead reckoning position lat. 84°-30' North; long. 11°-04'E. Curvature of line had to be applied. This fix put the true position of the plane about a mile or two to the left of the course.

22. During the hour ending 5<sup>h</sup>-22<sup>m</sup> G.C.T. made average speed of 78.5 m.p.h. Position 85°03.5' lat. North and long. 11°-04 East.

23. During the hour ending 6<sup>h</sup>-22<sup>m</sup> G.C.T. made average speed of 80.5 m.p.h. Position at 6<sup>h</sup>-22<sup>m</sup> G.C.T. by D. R. was lat. 86°-24' North long. 11°-04' East. Light wind from east.

24. At 7<sup>h</sup>-07<sup>m</sup>-10<sup>s</sup> G.C.T. took altitude sun's centre 18° 18'-18".

G.C.T.	=	7 <sup>h</sup> -07 <sup>m</sup> -10 <sup>s</sup>	Sext Alt.	=	18°-18'-18"
Eqd	=	(4)3 -37	p & r	=	(-)2 -46
G.A.C.T.	=	7 <sup>h</sup> -10 <sup>m</sup> -47 <sup>s</sup>	True Alt.	=	18°-15'-32"
			Dec	=	17 -10 -18
			Alt. Diff	=	1°-5' -14"

to be laid off towards sun since computed altitude is less than observed.

Dead reckoning position at time of sight lat. 87°-25' long 11°-04' East.

This sight indicated that the plane was about five miles to the left and ahead of the course. Brought plane back on course during hour ending at 8<sup>h</sup>-22<sup>m</sup> G.C.T.

25. During hour ending at 7<sup>h</sup>-22<sup>m</sup> G.C.T. made an average speed of 81 m.p.h. Dead reckoning position lat. 87°-45' North long. 11°-04' East.

26. At 8<sup>h</sup>-18<sup>m</sup>-26<sup>s</sup> took sextant altitude. Sun centre 17°-56'-31".

G.C.T.	=	8 <sup>h</sup> -18 <sup>m</sup> -26 <sup>s</sup>	Sext Alt.	=	17°-56'-31"
Eqd	=	(*)3 -38	p & r	=	(-)2 -55
G.A.C.T.	=	8 <sup>h</sup> 22 <sup>m</sup> 04 <sup>s</sup>	True Alt.	=	17°-53'-36"
			Dec	=	17 -11'-06
			Alt Diff.	=	42'-30"

to be laid towards the sun.

Dead reckoning position at time of sight lat. 89°-01'-40", long. 11°-04' East. This altitude showed the plane on the course and very near the dead reckoning position.

27. The average speed during the hour ending at 8<sup>h</sup>-22<sup>m</sup> G.C.T. was 81½ m.p.h. The position at 8<sup>h</sup>-22<sup>m</sup> was lat 89°-06.5' N. long 11°-04'E. The wind had shifted towards the north and was freshening.

28. At 8<sup>h</sup>-38<sup>m</sup>-25<sup>s</sup> G. C.T. took sextant altitude, sun's centre 17°-37'-18"

G.C.T. =	8 <sup>h</sup> -38 <sup>m</sup> -25 <sup>s</sup>	Sext Alt. =	17°-37'-18"
Eqd	(+) <u>3-37</u>	p & r =	(-) <u>3</u>
G.A.C.T. =	8 <sup>h</sup> -42 <sup>m</sup> -02 <sup>s</sup>	True Alt. =	17°-34'-18"
		Dec. =	17 -11'-18
		Alt. Diff =	23'-00"

to be laid towards the sun.

It is important to note that the length of the 89th degree on the meridian 15 degree East from Greenwich is not accurately marked on the chart. This has a bearing when working graphically.

Dead reckoning position lat 89°-28'-35" long. 11°-04' East. This sight indicated also that the plane was still on the course and near the dead reckoning position and about thirty one and a half mile from the pole. The wind had gotten stronger and still shifting towards the north. The sun was shining brightly and the visibility was unusually good.

29. At 8<sup>h</sup>-58<sup>m</sup>-55<sup>s</sup> G.C.T. took sextant altitude. Sun's centre 17°-18'-35".

G. C. T.	8 <sup>h</sup> -58 <sup>m</sup> -55 <sup>s</sup>	Sext Alt. =	17°-18'-35"
Eqd	(+) <u>3-37</u>	p & r =	(-) <u>3</u>
G.A.C.T. =	9 <sup>h</sup> -02 <sup>m</sup> -32 <sup>s</sup>	True Alt. =	17°-15'-35"
		Dec. =	17 -11'-36"
		Alt. Diff =	3'-59"

to be laid off towards sun.

Dead reckoning position lat. 89°-56' long. 11°-04'. This sight indicated that the plane was still on the course and a little over four miles from the pole. This sight and the two preceding sights had been taken with the utmost care and the platform was steady and by manoeuvring the plane the sight could be taken through the cabin window out of the wind stream. I found that I could sit down and breeze myself for some of the sights.

30. Immediately after getting the altitude difference and line for the last sight we had according to my calculations reached the pole. That was at 9.02 G.C.T. We headed to the right and took two more sights and turned and took

two sights more. I took these very carefully and they averaged 17°-15'-14 and the altitude seemed to remain constant. Applying p & r of three we get true altitude 17°-12' 14". There were many reasons for believing that we had passed over the pole. We had kept on a straight course, checked our position from time to time with sextant observations and appeared to get some good fixes near the pole. But to make certain that we would not miss passing over the pole, when we completed our observations we followed for several miles the meridian 11°-04' we followed to the pole, circled as near as we could judge with the distance we had gone beyond the pole as a radius and left the pole for the return trip at 9.15 G. C. T. Temperature zero Fahrenheit. Altitude 3000 feet.

31. There was another splendid check on our position. Soon after leaving the pole when I took the wheel to relieve Bennett my sextant which I had inadvertently left on the chart board slid off to the floor breaking the horizon glass. So it became essential to get back to Spitzbergen without a sextant and by dead reckoning alone. At eleven hours Greenwich Apparent Civil Time (one and three quarters hour after leaving the pole) when the sun would be crossing the meridian we were flying along 15 East. I got Bennett to head the plane as accurately as possible towards the sun. At the same time I checked the sun compass and found the shadow exactly bisected by the line on the hand of the clock. That proved we were exactly on our course—that we had steered a straight course from a known position.

32. The wind which had started freshening before we reached the pole was astern on the return trip and increased the speed considerably all the return flight. The average speeds for the first six hours of our return were 91, 89, 93.5, 92.5, 92 and 94.5 m.p.h. Of course the plane was much lighter than when we started and was getting lighter all the time.

33. The sun remained bright and visibility was splendid. Sighted land about 14.30 G.C.T. about the time we expected to find it, and found later that we were headed exactly for Grey Point, other evidences that we knew our position at all times. We headed towards Amsterdam Island long before reaching land and when we came to open water we found a strong wind blowing white caps beneath us.

34. We reached King's Bay at 16 hour and 34 four minutes Greenwich Civil Time. Temperature

35. The sun was shining brightly when we arrived just as it had been for the whole trip.

36. We had explored 10,000 square miles of hitherto unseen regions. Visibility in the Arctic is unusually good

on clear days and we had been able to see a great distance. The ice pack was crisscrossed all over with pressure ridges and there were many recently frozen over leads but few open leads where a landing could have been made in the water with pontoon as a boat. The chances of landing safely were far better with skis and I believe we could have landed safely in a number of places.

Respectfully,  
RE Byrd †



CHART No. 1068-P-24 - ALTITUDE BAROGRAPH

Published by JULIEN P. FRIEZ & SONS, Baltimore, Md., U. S. A.

Inst. No. 103

Test Beyond Polar Flight

Date May 9

Time 9 57 AMT Place Kings Bay, Westbergen

Air Plane The Fokker, Josephine Ford

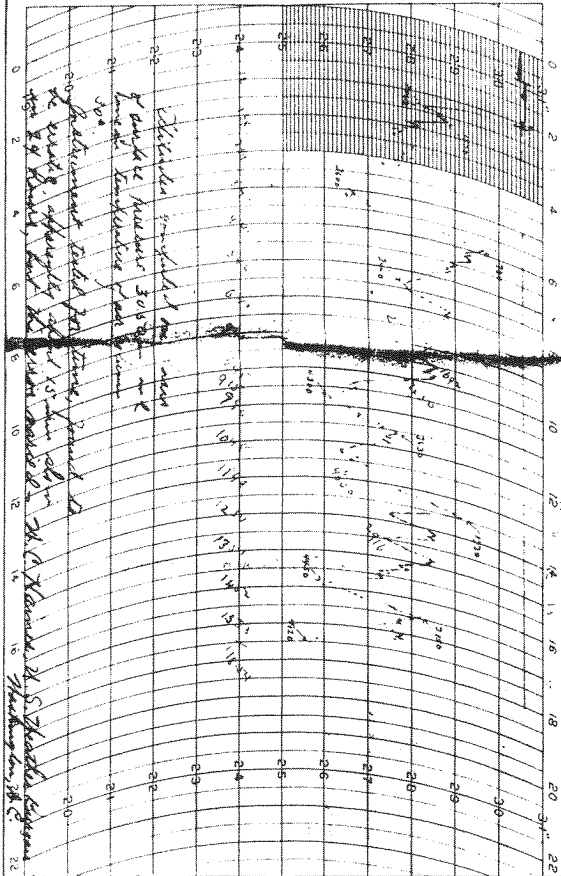
Ground Temp. 14

Ground Pressure 30.50

Corresponding Altitude -

By H. C. Haines Date May 12 1926

Remarks



Pressure 30.50  
 Mean barometer alt. 10000  
 10000

10000

# Additional Readings

## BOOKS AND ARTICLES

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## ARTICLES

The Papers of Admiral Richard E. Byrd and the Byrd Polar Research Center are at The Ohio State University in Columbus, Ohio. This collection is an enormous resource of more than a million items documenting Byrd's life and expeditions. Included are letters, reports, photographs, films, and the records of his privately financed expeditions.

Other primary sources for polar exploration may be found in the National Archives of the United States, Record Group 401. For Donald MacMillan, the best source is the Peary-MacMillan Arctic Museum and Arctic Studies Center Research Center at Bowdoin College, Maine.