

NAVAL AVIATION IN THE ANTARCTIC

By Curtis Utz

On 31 October 1956 a Navy R4D Skytrain made history as the first aircraft to land at the South Pole. The event was the result of decades of Naval Aviation experience in the region, which helped develop the aircraft technology and logistics needed to successfully operate aircraft in the extreme weather conditions of Antarctica.

Cdr. Richard E. Byrd took part in a privately funded expedition in 1929 and led the first aircraft crew that flew over the South Pole in November 1929. Byrd was a principal proponent of ski-equipped aircraft, even though these planes presented operational, logistical, and maintenance challenges that could only be met by establishing substantial bases ashore. Seaplanes, operated from tenders at the edge of the pack ice fields, did not have the same limitations, because refueling, quartering, and maintenance would be provided in the generally favorable conditions aboard ship. However, the seaplanes were limited to exploring the coastal areas because they had to take off from beyond the pack ice, while the shore-based ski planes could penetrate much deeper into the continent.

World War II led to suspension of activities in the Antarctic, but the Navy soon returned to the region to continue exploration and mapping. Operation Highjump, 1946–1947, was a massive effort that included 14 ships, 4,000 men, and 25 aircraft, including PBM Mariner seaplanes, R4D Skytrains equipped with a unique wheel/ski combination, and HOS, HO3S, and HNS helicopters. The Navy decided to fly the Skytrains to the continent from *Philippine Sea* (CV 47), and equip these two-engine cargo planes with jet assisted take off (JATO) equipment to provide extra thrust. The first R4D took off from *Philippine Sea* on 19 January 1946 piloted by

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Background, the icebreaker *Staten Island* (AGB 5) with an HUL-1 helicopter on board approaches the Palmer Peninsula during Antarctic operations in April 1963. Facing page, inset, Cdr. Richard E. Byrd prepares for the first flight over the South Pole in 1929 by wrapping a small U.S. flag around a stone from the grave of CWO Floyd Bennett, who piloted Byrd over the North Pole in 1926. Left, an R4D takes off from *Philippine Sea* (CV 47) using JATO bottles on 20 January 1949.



Cdr. William M. Hawkes. The R4Ds continued to use JATO for some operations from the ice fields, and JATO bottles also allowed the PBM Mariners to shorten their takeoffs in often ice choked waters. The utility of the JATO system ashore and at sea was vital to polar aviation. The helicopters, still in their infancy, proved useful in scouting for ice in the dangerous waters near the continent. The expedition's flights observed more than 700,000 square miles of Antarctica which were previously unexplored.

Operation Highjump demonstrated the viability of new technologies, such as the helicopter and JATO, and confirmed the need for ski-equipped aircraft in Antarctic aviation operations. Naval Aviation's role in polar exploration, however, decreased over the next several years. The Navy's next large-scale operation in the region was in response to the International Geophysical Year (IGY) set for 1957.

Navy efforts to support the IGY resulted in the establishment of United States Naval Support Forces,

Above, a passenger disembarks from a Helicopter Utility Squadron 1 HUL-1 Sioux onto the deck of the icebreaker Staten Island (AGB 5) circa 1959. Facing page, an HUS-1A Seahorse from VX-6 hovers near the icebreaker Atka (AGB 3) in McMurdo Sound in 1960.

Antarctica in 1955 under the command of RAdm. George J. Dufek. The U.S. proposed establishing two bases in the interior of the continent, including one at the South Pole, as part of the project. The only effective way to get the men and material to the pole for the new station would be via air.

Improvements in air delivery meant

that much of the material could be dropped from cargo planes, but personnel and scientific instruments would have to be brought in by aircraft that could land at the polar plateau. A dedicated aviation organization was needed to meet this requirement, and the Navy had the most experience with Antarctic operations.

The Navy formed Air Development Squadron (VX) 6 at NAS Patuxent River, Md., in January 1955 specifically to support missions in Antarctica. The squadron included a variety of aircraft to deal with the harsh conditions, including some that were ski-equipped to work on the ice shelf or possibly at the pole. Two R4Ds and two P2V Neptunes were equipped with skis, as were two UF-1

Albatross flying boats. Two R5D Skymasters had only wheels and were to be used on the smooth sea ice at McMurdo Sound. Other aircraft included three HO4S-3 helicopters and four UC-1 Otters. JATO bottles also were also provided to the squadron because they had proved invaluable for the aircraft in Operation Highjump.

The United States Naval Support Forces, Antarctica plan for the winter of 1955–1956 was codenamed Operation Deep Freeze I. In late 1955, VX-6 shifted from Pax River to New Zealand. Plans were made to fly most of the aircraft in from New Zealand to McMurdo Sound, while others were to be brought in pieces by ship. As a result of adverse wind and weather conditions, only the Skymasters and Neptunes flew to Antarctica, while the Otters and helos were delivered by ship.

During its first season on the ice, VX-6 continued extensive exploratory and photo mapping missions. Logistics were difficult and the aircraft were fueled directly from tankers brought into McMurdo, a practice that was not very efficient. The wheeled Skymasters also had to contend with unusual hazards of unmarked ice runways peppered with penguin and seal holes. In the often harsh takeoff conditions, the JATO equipment provided vital extra thrust. In February the squadron suffered its first loss, as one of its two P2Vs was lost over Venezuela during a flight between the U.S. and Antarctica.

In early 1956, VX-6 returned to the U.S. and began preparations for Operation Deep Freeze II, during which construction on a base at the South Pole would start.





Above, the R4D *Que Sera Sera* idles next to its refueling tanks at Beardmore-Scott Auxiliary Air Base. Left, the crew of *Que Sera Sera* at the South Pole on 31 October 1956. From left: AD2 John P. Strider, RAdm. George Dufek, LCdr. Conrad Shinn, Lt. John Swadener, AT2 William Cumbie, Capt. William Hawkes, and Capt. Douglas Cordiner. Below, *Que Sera Sera* landing at the South Pole as seen from an Air Force C-124 Globemaster. Facing page, an LC-130 from VXE-6 during Antarctic operations.

After returning to New Zealand, VX-6 began to move to Antarctica in October 1956. VX-6 lost its last P2V on 17 October 1956 as it landed at McMurdo, and the landing of men and scientific equipment at the polar plateau therefore fell to the squadron's four ski-equipped R4D Skytrains. Using the Skytrains, however, meant that an additional field for refueling would have to be set up between McMurdo Sound and the pole. One was quickly established and named Beardmore-Scott Auxiliary Air Base.

Landing at the pole was a dangerous proposition and there was lively debate over the conditions that would be met there. Some theorized that the plateau would be covered with soft snow into which the skis would deeply sink; while others thought the surface would be frozen and covered with "sastrugi"—wind-formed ridges of



hardened snow—that could be like landing on a washboard.

RAdm. Dufek decided to launch an exploratory mission in late October to land at the pole and set up navigational equipment to guide returning flights. The aircraft selected for the landing was an R4D nicknamed *Que Sera Sera*. The Skytrain would also be accompanied by a Navy R5D Skymaster and an Air Force C-124 Globemaster to provide navigation assistance and drop survival gear in case of an accident. On 31 October 1956 *Que Sera Sera* left for the South Pole carrying the crew of pilot LCdr. Conrad S. Shinn, copilot Capt. William M. Hawkes, navigator Lt. John Swadener, crew chief AD2 John P. Strider, and radioman AT2 William A. Cumbie. RAdm. Dufek and Capt. Douglass L. L. Cordiner, CO of VX-6, were also on board for the historic flight.

Shortly after the three planes took off, the R5D developed engine trouble and turned back. The other two aircraft pressed on and the Globemaster navigator calculated the position of the South Pole. As *Que Sera Sera* approached the plateau, the plane's oil pressure dropped and oil streamed from the engines. Shinn reported that his instrument panel was lighting up like a Christmas tree. Maj. C. J. Ellen, piloting the C-124, radioed, "Don't worry Gus, if you can't get off I'll belly land this baby and give you a warm house to live in." Shinn made several low-level passes to check the surface and brought the plane in for a landing. The surface was hard, and after bouncing on the sastrugi, the plane stopped. At 0834 GMT on 31 October, the men on board *Que Sera Sera* became the first to stand at the Pole since Capt. Robert Scott, Royal Navy, and his ill-fated party had been there in 1912. The crew placed a U.S. flag at the site and completed setting up the navigation aids. They only took two photos, however, before the cameras froze in the cold; the temperature was -58F with a 10-15 knot wind.

Leaving the South Pole, however, was a challenge. After 49 minutes at the pole the men climbed back on board the Skytrain. Shinn and Hawkes had kept the engines running but as they revved the engines the plane

didn't budge. The extreme cold had frozen the skis fast to the ice. Shinn fired four JATO bottles but that didn't loosen the aircraft. He then fired the remaining 11 JATO bottles in a quick series of four, four, and three. To the horrified crew of the Globemaster overhead, it appeared that the Navy plane exploded in a ball of fire, smoke, and snow. But *Que Sera Sera* moved sluggishly and lifted off at 60 knots. The R4D made it to Beardmore-Scott while Maj. Ellen flew on to McMurdo to report the good news.

The extreme cold encountered at the polar plateau led to the decision to delay subsequent flights until later in November. Soon men, equipment, dogs, and sleds were being flown into the site and construction of the base started. VX-6 (later redesignated Antarctic Air Development Squadron 6) had begun its 44 year history of supporting operations at the pole. In 1999 the squadron was disestablished and the Antarctic support mission was taken over by the Air National Guard.

Fifty years after its historic flight, *Que Sera Sera* survives. The aircraft is now on display at the National Museum of Naval Aviation at NAS Pensacola, Fla. ✈

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