



(Photo U.S. Navy for U.S. Geological Survey)

*Oblique aerial photographic view of part of the Sentinel Range. Four of the mountains climbed by the American Antarctic Mountaineering Expedition are Vinson Massif (1), Mount Shinn (2), Mount Tyree (3), and Mount Gardner (4). Mount Ostenso and Long Gables, also climbed, are among the peaks farther north.*

## The American Antarctic Mountaineering Expedition

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A Navy LC-130 Hercules circled over the lower slopes of the Sentinel Range, then descended, touched its skis to the snow, and glided to a stop near 10 waiting mountaineers and their equipment. Twenty-five miles to the east, the 16,860-foot-high summit of Vinson Massif, highest mountain in Antarctica, glistened above a wreath of gray cloud. Nearby were Mount Tyree, 16,250 feet, second highest mountain on the Continent; Mount Shinn, about 16,000 feet; Mount Gardner, 15,800 feet; and Mount Ostenso and Long Gables, both over 13,000 feet high. As the men loaded their equipment into the plane and then clambered aboard for the return trip to McMurdo, a fascinating mountain-climbing experience, involving first ascents of all of those peaks, was coming to an end.

That experience had begun in the United States three years earlier when it occurred to members of the American Alpine Club that a major mountaineering challenge, heretofore ignored, waited in Antarc-

tica. Although tentative plans were made to answer the challenge, it was not until 1966 that those plans began to materialize. In November of that year, the National Geographic Society agreed to provide major financial support for the undertaking, and the Office of Antarctic Programs of the National Science Foundation, in view of the proven capability, national representation, and scientific aims of the group, arranged with the Department of Defense for the U.S. Naval Support Force, Antarctica, to provide the logistics required. On December 3, the climbing party, called the American Antarctic Mountaineering Expedition, assembled in Los Angeles to prepare for the unprecedented undertaking.

### The Members

The expedition consisted of 10 members selected by the American Alpine Club. Nicholas Clinch, a Los Angeles lawyer, was expedition leader; he had successfully led two previous American mountaineering expeditions to the Himalayas. Dr. William E. Long of Alaska Methodist University, John P. Evans of the University of Minnesota, and Charles D. Hollister of the Lamont Geological Observatory of Columbia University comprised the geologic group. Long and Evans had explored antarctic mountains previously, Long with the 1958 traverse party which first saw the Sentinel Range from the ground, and Evans with the 1963-1964 University of Minnesota party that visited the Heritage and Ellsworth Mountains. The radio operator was Eiichi Fukushima, a

\* Member, American Antarctic Mountaineering Expedition.

doctoral candidate in physics at the University of Washington. Peter Schoening of Seattle, Washington, Richard Wahlstrom of Edmonds, Washington, Brian Marts of Estes Park, Colorado, and Barry Corbet of Jackson Hole, Wyoming, were all mountaineers of considerable experience (Corbet was a member of the 1963 American Mount Everest Expedition). Physician's services were provided by the author.

The party flew by commercial airliner to Christchurch, New Zealand, and thence, on December 6,\* by military aircraft to McMurdo Station. The following day, the mountaineers and their two tons of equipment, including a motor toboggan, were transferred to a ski-equipped Hercules LC-130, which took them the remaining 1,300 miles to the Sentinel Range and a landing site only 25 miles from Vinson Massif.

At the landing site, the motor toboggan was loaded with all of the equipment and supplies needed to sustain the group for at least 60 days. The ascent of Vinson Massif, the first and primary objective of the expedition, began on December 9 with a toboggan trip to the head of a deep cirque two miles northwest of the mountain at an altitude of 8,500 feet. Here, a base camp was set up for the ascents of both Vinson Massif and its next neighbor to the north, Mount Shinn.

### Vinson Massif and Mount Shinn

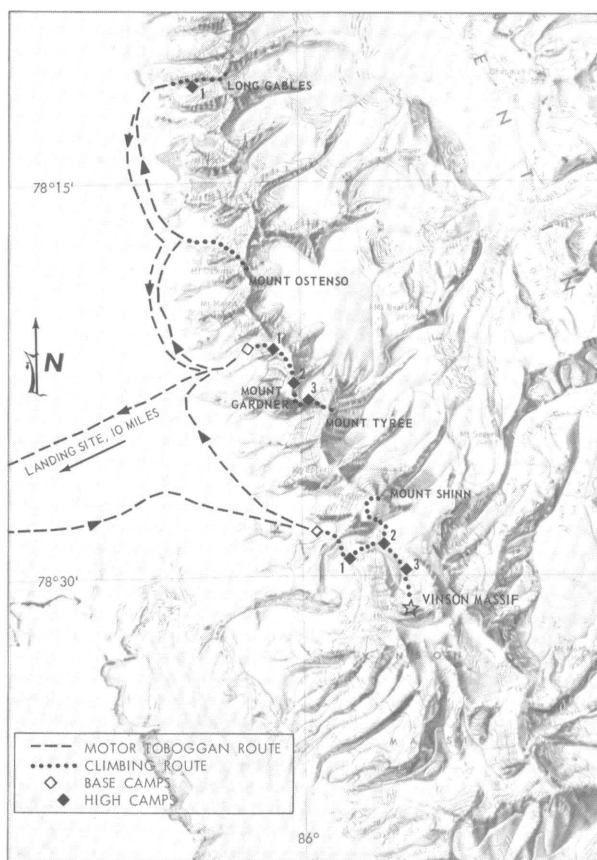
Vinson Massif is a 10-mile-long block-shaped prominence that stands 9,000 feet above the surrounding ice. The expedition's route to the highest of its numerous rocky summits led up a steep snow slope at the head of the cirque in which the base camp had been placed and over a pass into a glacial basin on the other side. In this basin, at an altitude of 10,500 feet, camp 1 was set up on December 11. On the following day, a route was found through the upper icefall of the basin, at the head of which, on the rolling summit plateau, camp 2 was established at 12,500 feet. A severe windstorm, gusting to 60 knots, immobilized the expedition for the next four days. On December 16, Barry Corbet, Peter Schoening, John Evans, and William Long placed camp 3 at 14,500 feet, and on the following day this group went on to the summit. The rest of the expedition, which had divided into two three-man teams, reached the summit on the 18th and 19th. In a gesture symbolic of the international cooperation that exists in Antarctica, the first group to reach the top of Vinson Massif planted there the flags of the 12 nations that signed the Antarctic Treaty.

\* All times given are local for the areas concerned.



(Photo courtesy National Geographic Society)

The flags of the 12 Antarctic Treaty nations fly at the summit of Vinson Massif.



Route and camp locations of American Antarctic Mountaineering Expedition portrayed on a portion of U.S. Geological Survey 1:250,000 Reconnaissance Series map "Vinson Massif" (compiled 1961).

After returning to camp 2, the expedition again divided itself into three climbing parties, and on the 20th, 21st, and 24th climbed to Mount Shinn's conical, heavily snow-corniced summit. By Christmas Day, all expedition members had returned to the base camp.

### **Mounts Gardner and Tyree**

The expedition then headed northward by motor toboggan along the western flank of the range to the foot of Mount Gardner, where it set up a base camp at 8,500 feet and planned its climbs of Mounts Gardner and Tyree. Mount Gardner, a fortress-like mountain capped by a rolling plateau, was a worthy objective in itself. But because it was situated beside the second highest mountain in Antarctica, Mount Tyree—a forbidding pyramid of steep rock and ice that gave only fleeting hints of feasible climbing routes—the expedition, quite understandably, gave its full attention to the larger objective. As it turned out, Mount Gardner became a stepping stone to the ascent of Mount Tyree, for the route finally chosen lay over the lower summit.

The climb began December 27 on Mount Gardner's northwestern flank with the ascent of a steep, narrow, mile-long couloir, at the top of which, on the gently rolling, snow-covered plateau, camp 1 was established. The party then traversed the plateau, establishing camp 2 at about 14,000 feet and reaching the summit on December 31.

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### ***Geologic Observations***

The geologic program included the sampling of Crashsite Quartzite on ridges between the base camps and summits of all of the mountains climbed and on the flanks of some that were not climbed. Only one exposure of pre-Crashsite rock was found—near the head of the Nimitz Glacier northwest of the summit of Vinson Massif. A sequence of rhythmic flysch-like bedding was noted in the Crashsite Quartzite at an altitude of about 9,000 feet on the west ridge of Mount Shinn. On the west ridge of Mount Shear, glacial striations were observed as high as 10,200 feet (from 1,200 to 1,500 feet above the present ice level). Between 1200 and 2100 (local time) on December 26, 27, and 28, running melt-water was observed on the darkest rocks on this ridge below an altitude of 9,500 feet. This water began to freeze at about 2200 hours, causing visible rock breakage.

The rock samples collected by the expedition are now being analyzed. The results will be published this spring by the New York Academy of Sciences.

A 1,500-foot descent that involved fastening 1,000 feet of climbing rope to steep ice and rock was then made to a narrow saddle between Mounts Gardner and Tyree. Because of the difficulties in reaching the saddle and setting up camp 3 there, it was decided that only two men would attempt the final ascent of Mount Tyree. They were Barry Corbet and John Evans.

These men lived in the saddle for five days, during which they made two attempts to reach Mount Tyree's summit. First, they tried to climb the ridge directly, but were turned back by steep rock pinnacles 500 feet above camp. On the second try, they climbed mostly along the northern slope of the ridge, avoiding the pinnacles. They reached the summit at about 1800 on January 4. The climb to the top of Mount Tyree and back to the saddle lasted 20 hours, all spent at altitudes above 14,000 feet.

During this period, two climbers stood by at camp 2, and the others waited to assist, if necessary, at lower levels. Help was not needed, however, and by January 6, the entire expedition had reassembled at the Mount Gardner base camp.

### **Mount Ostenso and Long Gables**

On January 11, after a period of rest and forced rest while waiting out a storm, the expedition continued northward for quick ascents of Mount Ostenso and Long Gables. Simultaneously, four men went up each mountain. The remaining two men operated the motor toboggan between the bases of the mountains.

By noon on the 12th, the entire group had returned to the base camp at Mount Gardner, and by late the following day it had reached the Hercules landing site. Four days later, on January 17, the Navy aircraft arrived to transport the party back to McMurdo Station.

As the plane took off and circled in front of the Sentinels before setting course for McMurdo Station, the climbers wondered, as they had on many occasions during their 40 days in this remote mountain range, how they might have fared in their undertaking without Navy logistic support. As the expedition leader, Nicholas Clinch, noted during an interview in Washington, "A big psychological factor was the knowledge that the U.S. Navy was standing by."

The American Antarctic Mountaineering Expedition had achieved all of its goals. In addition to climbing six mountains, including the four highest in Antarctica, it had contributed to the objectives of the United States Antarctic Research Program by making a geological reconnaissance of upper levels of the Sentinels which had not been visited previously.