

THE McCALL GLACIER PROJECT AND ITS LOGISTICS

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Locating a suitable glacier

IN August 1956 after the United States I.G.Y. Glaciological Panel had decided to organize a glacial-meteorological project in the Romanzof Mountains of the eastern Brooks Range, the writer accompanied Dr. Walter A. Wood, the Project Director, and the late Dr. Richard C. Hubley, the then Project Chief Scientist, to northern Alaska. We hoped to find in the highest area of the Brooks Range, around 144°W . and $69^{\circ}30'\text{N}$., a valley glacier that would lend itself to a micrometeorological and glacier-movement survey program that could be undertaken during the International Geophysical Year. The Romanzof Mountains support the most significant group of glaciers in the Brooks Range, with a cumulative glacierized area of perhaps 260 sq. km. The glaciers lie generally above 1,500 m. among a group of peaks of heights between 2,290 m. and 2,740 m. above sea-level, and are thermally sub-polar.

One of the first requirements before any program planning could begin was to find if any of the glaciers in this unfamiliar region were reasonably accessible. Approaching the area that interested us proved remarkably easy. As I.G.Y. personnel the party were offered the use of an Air-Force C-47 to transport them from Fairbanks to the small Indian community of Bettles, 180 miles to the north and one-third of the distance to the Romanzof area, but we could have travelled on one of the regular scheduled airline flights that radiate from Fairbanks to all major settlements in the north of Alaska. In order to reconnoitre conveniently the Mt. Michelson area of the range, it was necessary to establish a camp at Lake Schrader within an hour's flying distance from the mountains. Facilities for this were available at Bettles: a pilot who knew the country well, and a suitable airplane. Within 5 hours after having strapped ourselves into a Cessna 180, an all-metal three-passenger float-plane, the party were encamped at the lake. After another hour in the air from Lake Schrader an ideal glacier for the scientific program had been located: McCall Glacier, a slender valley glacier with a gentle gradient, no ice falls, limited crevassing, and no tributary cirque glaciers. The glacier terminus lay almost at the frontal scarp of the mountains. This meant that the glacier could, if necessary, be approached

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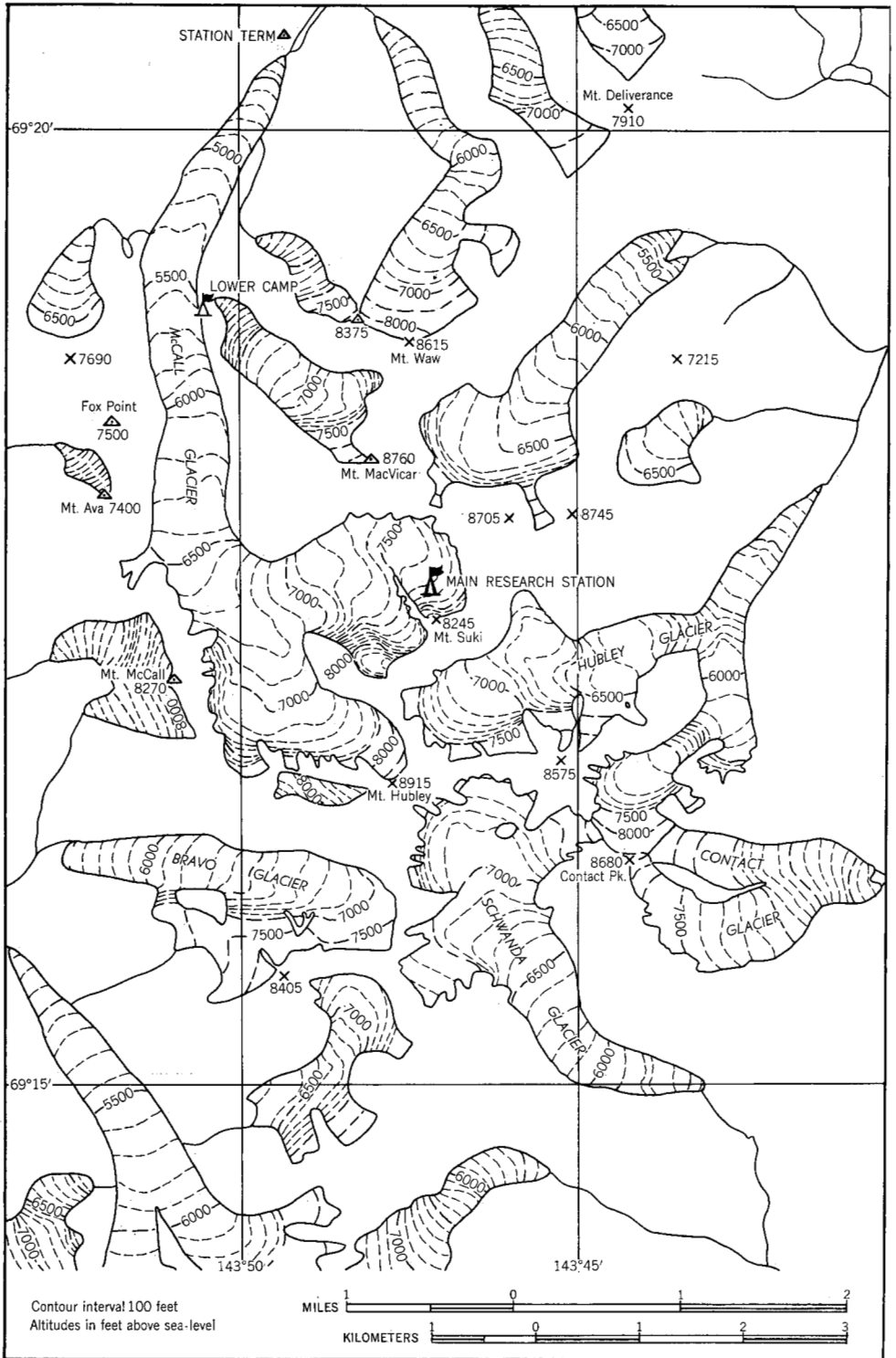


Fig. 1. Map showing McCall, Hubley, Bravo, Schwanda, and Contact glaciers, with the main peaks surrounding them. Main station about at centre of map. (Note: of the names appearing on this map only Mount Hubley and McCall Glacier have been recognized officially by the Board on Geographic Names. All others are used here for convenience of reference only).

on foot from a low camp on the tundra, that a light plane on ski could probably land on the glacier without difficulty, and that perhaps vehicles could be driven up the valley to transport fragile supplies to a glacier camp site (see Fig. 1¹).

Logistical problems

The logistical problems of the McCall Glacier Project proved to be simple for several reasons. First, the U.S. Air Force had agreed to drop the bulk of fuel and supplies on the glacier and resupply the camp during the 18 months of the I.G.Y. Without the organization and special equipment of the Air Force in Alaska, depositing 34 tons of fuel and 18 tons of supplies and rations for four men would have been a major obstacle for a field party that had to rely on commercial transportation.

Second, although commercial airlines do not have the facilities for this kind of large-scale operation, they can put men and equipment anywhere in Alaska efficiently and with minimum risk, because they employ many pilots who are experienced in flying small aircraft, and who know intimately the country over which they fly. Even though the three pilots who have flown for this project had never landed on a glacier before 1957, they had an average of 8 years' experience with all other types of arctic terrain and quickly became proficient in operating from a glacier surface. These pilots have demonstrated to many skeptics that glacier flying can be as safe an operation as any other.

After the initial reconnaissance in 1956 the project planning went ahead with the assurance that station components would be parachuted to the site. The problem of moving personnel and delicate apparatus to the glacier and relieving staff members periodically hung on the adaptability of ski-equipped light planes. Without this air transport it would have been necessary to use tracked vehicles or back-packing to move from a low-level site on the tundra all material that could not be dropped.

In April 1957 a low-level camp was established at a small lake 10 miles from the glacier terminus. Later this camp was to be completely outfitted to serve the glacier party as an emergency retreat and to be used as a summer station by other field workers. Next, a landing was made on the lower part of the glacier. The glacier surface, very smooth, with only a small accumulation of wind-packed snow in most places, and areas of bare ice, made an excellent landing field after it had been marked with flags.

Since it was necessary to establish not only a camp near the glacier terminus for use by the surveying party in summer, but also a main camp for the meteorological station as high as possible in one of the three cirques feeding the glacier trunk, another landing had to be attempted 3 miles

¹ The figures illustrating this and the following two papers have been numbered consecutively for ease of reference.



Fig. 2. View looking east to southeast into the three cirques at the head of McCall Glacier. The small dot in the right half of the uppermost (left) cirque is the main station. The peak beyond the lowest (right) cirque is Mount Hubley, 8,915 feet (2,717 m.).

farther up the glacier in a more confined bowl with a steeper slope. The landing was accomplished successfully and has been repeated many times (see Fig. 2).

In the first week of May 1957 C-119 cargo planes of the U.S. Air Force dropped the prefabricated buildings, rations, and fuel on the head snows of McCall Glacier. The four-man party erected a temporary camp below the drop area and began assembling the five half-units of Jamesway huts that were to serve as buildings for the upper station. Within 6 days two Jamesway huts had been erected on a levelled area of firn, the remaining half-unit was set up to house the diesel light plant, and the provisions sledged into camp.

A few days later the first load of instruments was flown from Barter Island, 50 miles to the north, and landed only 300 feet down slope from the station. The plane was used also to move equipment from the lower glacier camp to the high station.

By June 13 both glacier camps were completed. Micrometeorological instruments were in place and working. The 100-watt radio linking the glacier with all other radio stations in north-central Alaska was operating. A 3-month supply of fuel and rations was cached at the camps and the scientific program was at last fully under way.



Fig. 3. View down glacier from west ridge of Mount Hubley. Note hanging glacier in right middleground, avalanche tracks in left foreground, and ski tracks in right foreground.