

## SNOW CORNICE 1949: A PRELIMINARY REPORT

ON July 8 a telegram was received at the Institute headquarters from Walter Wood, leader of the 1949 Snow Cornice Expedition, which reads: "Mount Vancouver climbed fifth July by Odell, Hainsworth, McCarter and Bruce-Robertson. Party returned to station seventh."

Mount Vancouver, 15,850 ft., in the St. Elias Mountains on the boundary between Alaska and Canada, towers above the 1948 base camp of Snow Cornice. In 1948 Walter Wood, Director of the Institute's New York Office, led an expedition to the Seward Ice Field and its distributary, the Malaspina glacier. Project Snow Cornice, as this expedition was known, laid the groundwork for the 1949 season, both in establishing a semi-permanent research station on the Seward Ice Field and in initiating a long-range glaciological programme. An account of the work of this expedition is given in *Arctic* Vol. I, No. 2, pp. 107-112; a full account of the 1949 expedition will be published when the season's work is completed.

In 1948 all transport was by air and this plan has been followed in 1949, with the same pilot and the Institute's Norseman. The aircraft is fitted with combination ski-wheels to enable take-offs from the hard runway at Yakutat airport and landings on the snow of the Ice Field.

Writing on July 2 Walter Wood sends the following information from the field:

"In 1949 we are in the field, fully equipped and supplied, one month earlier than in 1948. Already the research station and the landing strip camp are supplied for two months' occupancy. Further, three camps have been established by air drop on the upper slopes of Mount Vancouver and a party of four men is attempting to reach the summit of this giant, sometimes called "the highest unclimbed peak on the continent".

In 1949 advantage has been taken of the 1948 experience to adapt and improve equipment and techniques, though it is too early to draw any conclusions based on 1949 experience.

A number of improvements have been made to the ski-wheel combination for the Norseman. For instance the pilot can now move the skis so as to produce or eliminate the wheel as the landing surface requires. So far nine landings and take-offs have been made to date, without regard to the snow surface or to time of day. In 1948 the drag produced by the extended wheel during snow operations was not only prejudicial to the safety of the operation but, at best, permitted snow take-offs on thoroughly frozen surfaces only. Although we can see the necessity for alterations in basic design, we feel confident that we have solved the

problem of aircraft operations under conditions demanded by Snow Cornice.

In 1948 the St. Elias Mountains and the adjacent coastal fringe enjoyed the finest summer weather on record, but this was followed by one of the most severe fall, winter and spring sequences in the history of meteorological records. As the fifteen members of the Snow Cornice expedition assembled at Yakutat, Alaska early in June 1949 snow still lay deep in the woods, and the mountains, when visible at all, showed chalky white slopes broken nowhere by the black of dry rock.

When Snow Cornice left the field early in September 1948, a cache of supplies was left on the surface of the basin, marked by a wind direction indicator rising about 18 feet above the surface. On June 15, when Maurice King, our pilot, landed Prof. R. P. Sharp and myself at the same place, only about four feet of marker was visible. Later measurement showed that, at the time of our arrival, there had been a net accumulation of some  $14\frac{1}{2}$  feet of snow during the winter. Undoubtedly some ablation had already taken place so it is not possible to give the maximum accumulation of the 1948-9 winter snow. It is interesting to recall that the net 1946-7 gain was estimated to be 17-18 inches of water and for 1947-8 a gain of 22-23 inches was observed. A guarded estimate for 1948-9 might be a gain of 60 inches of water.

Fortunately the Institute's research station, perched on a nunatak at 6100 feet, did not suffer the same inundation as the cache. The 16 x 24 foot Jamesway Hut weathered the winter with no damage to itself or its contents. Naturally snow made its way into the interior but all equipment and supplies had been well protected and were found in perfect condition. Eight hours after our return the hut was in running order.

The seismic and radar studies begun last year will be continued and long-range sledge journeys for the collection of geological evidence and stereophotogrammetric mapping operations are planned. Studies of glacier movement await, at least in some phases, the reappearance of movement stakes set and measured in 1948. Standard meteorological observations commenced with the reopening of the station and continue to be fed by radio to the stations within the Alaska forecast network. Finally, the inhabitants of nunataks emerging from the ice, small coneys or rock rabbits, are being sought for comparison with less isolated representatives of the same species. Collections of moths and insects are also being made.

There is much to be done, but a good start has been made."