

MANUFACTURING SNOW BY SHAVING

By Fred. A. Hall

THE PROBLEM of providing sufficient snow for ski jumping meets has been a source of great worry to many clubs, where weather conditions are not dependable.

In some instances snow has been imported from great distances by railroad and trucks, usually at heavy expense, in order that an important meet would not be cancelled.

Methods of storing snow to provide for such emergencies have also been devised, but in most cases such snow has not been found to be satisfactory by the time it has been applied to the hill, especially during a severe thaw.

A novel experiment was attempted by the Toronto Ski Club "Board of Strategy" when faced with the opening of their new jump with a major competition and no snow in sight. An excellent substitute for snow was provided in the form of shaved ice.

Messrs. C. Shorney and H. T. Cliff of the Toronto club made arrangements with Mr. Ross Workman of the University of Toronto skating rink to have their ice planer work overtime. This equipment consists of planing blades and revolving brush drawn by a tractor and is normally used for levelling the surface of the ice. The blades can be set to cut thicknesses and $\frac{1}{2}$ in. was thought to be suitable for this purpose. Several trucks were employed to haul the pulverized ice to the jump, a distance of about four miles, and such was the speed of the planer that it shaved the ice faster than it could be loaded into the trucks. Seventy-five tons were cut and delivered within a few hours. This was sufficient to cover the entire hill from tower to outrun, with about six or eight inches on the landing slope.

Incidentally the inrun is eleven feet wide and the landing hill thirty feet wide at the top and fifty feet at the bottom.

The inrun which is entirely artificial was constructed of one inch boards overlapping about two inches. This provided a ridge one inch deep every six inches down the slope and held the snow-ice perfectly.

Some difficulty was encountered on the landing slope, however, as the ice crystals would not adhere to the smooth frozen ground. The grading of the landing slope had just been completed and the surface was not prepared for holding snow. This difficulty was soon overcome by burning straw on the steep part of the hill, and sifting snow on it while it was still burning. When the burning had ceased the wet unburned straw froze solidly to the ground forming a matting sufficient to hold the shaved ice from sliding



A study in the Rockies, by Peter Whyte

In actual practice the shaved ice proved much better than snow, the following observations being made:—

1. It was from ten to twenty per cent faster than dry snow as jumps made on that day were comparatively longer than those made the following week when about six inches of powder snow covered the hill.

2. It packed similarly to dry snow and a definite track could be made

3. All types of wax seemed to act the same, even bare skis were equally effective in speed.

4. There was no noticeable difference in the speed on the inrun and on the landing hill. In some cases where the inrun is artificial the effect of the sun on the underside tends to soften the snow, and if there are cracks between the boards, ridges of ice will form in the snow above the cracks

The landing hill if facing the north, will not be affected by the sun and hence will be of a different consistency than the inrun.

The shaved ice, however, proved to be uniform throughout.

5. There is no doubt that the shaved ice would last much longer and keep in better condition than ordinary snow, although we had no opportunity to prove this as we had a succession of snowfalls for the balance of the season.

We believe this experiment to be unique and worthy of note to many clubs faced with the same problem.

The total cost of "manufacturing" the snow was about \$80.00, or approximately \$1.00 per ton. This was for trucking alone as the cutting was done free through the courtesy of Mr. Ross Workman of the University of Toronto.