



## *Snow Survey Centennial Celebration* 1906-2006

### **Operation Snow-Cat Cascade**

I nearly tossed out the dog-eared manila folder as I was cleaning out the dusty old cardboard box. In a new job, at a new location, I was trying to get settled in. Most of the file labels seemed irrelevant, some nearly unreadable, so I was rapidly making space in my new cubicle. As I reached over to put the folder into the "toss" pile, I noticed that it contained an old carbon copy of a document, and that there were some black and white photographs attached to the last few pages. Being a rather curious sort, I grabbed the file for a quick look. I could barely make out the words, "Operation Snow-Cat Cascade" in the title. The pictures included a pair of old ski-equipped Tucker snow-cats in the snow. Because I had enjoyed driving the Tuckers while snow surveying in Montana, I leaned back in my chair and began to read.

The document was dated October 15, 1948, and was written by R. A. "Arch" Work, Research Project Supervisor, Division of Irrigation, Soil Conservation Service, Medford, Oregon.

Work began, "This is a report of a 22-day winter snow survey trip of 1948, along the spine of Oregon Cascade Mountains. This report details experiences of the 7 man crew on the 573 mile trip with two Snow-Cat machines."



During that era, the twenty-three high elevation Oregon Cascade snow courses were surveyed by eleven, two-man crews traveling by foot, under the overall supervision of W. T. "Jack" Frost. The thought was that it might be possible for a single team of men to do the same job. Using modern machines capable of traveling long distances over deep snow, they would traverse the entire length of the Oregon Cascades and sample all of the snow courses in a more efficient and timely manner. "Operation Snow-Cat Cascade" was an attempt to test the feasibility of that concept.

Although the idea was proposed in May of 1945, it wasn't until April of 1947 that Mr. Work got the ball rolling. He enlisted the help of numerous people along the way to accomplish tasks such as locating supplies and equipment, pre-positioning food and fuel caches, monitoring radio frequencies, and helping to break trail at various locations along the route. Those that made the journey were carefully selected by Mr. Work, and included him, as well as the following men:

R. B. Branstead, Head, Visual Education Section, SCS, Portland, Oregon  
A. H. Brown, Staff Writer, National Geographic Society, Washington, DC  
J. E. Fletcher, Staff Photographer, National Geographic Society, Washington, DC  
Dr. Harvey A. Woods, MD, Ashland, Oregon  
G. F. Sturdevant, Snow Surveyor, Oregon Agricultural Experiment Station,  
Medford, Oregon  
Jasper Tucker, Engineer, Tucker Snow-Cat Company, Medford, Oregon

The government provided skis or snowshoes, Polaroid ski goggles, sleeping bags, and mess kits. Each member was responsible for obtaining his own personal equipment. Clothing was mainly wool, using the same layering principle used today. Nightshirts were optional as were whiskey or brandy.

The group departed Ashland by truck at 7:30 am on Friday, March 19, 1948 after interviews by radio station KYJC, Medford. The journey actually began at Greensprings Summit, about eight miles north of the California border. The route of travel took the group north to Fish Lake, on to the lip of Crater Lake, past Diamond Lake, through Windigo Pass, and up through Dutchman Flat to Sisters. From there they crossed Santiam Pass, to Detroit, past Olallie Lake, to the end of the trail at Cooper Spur on the north side of Mount Hood. Total distance traveled was 573 miles. The route crossed the Cascade crest 15 times.

Mechanically, the Tucker Snow-Cats worked well. Most problems were due to operator error. One setback did occur just south of the Crater Lake National Park boundary when the steering cable on one of the Tuckers broke. The fix was reasonably simple except for the fact that it was dark and snowing heavily. The only major mechanical breakdown occurred near Brown's Creek, when the rear drive axle on one of the snow-cats snapped. A temporary repair failed so the axle had to be removed and taken into Bend.

The trip was not a picnic. It snowed 20 of the 22 days the group was on the trail. Several feet of new snow made hard work for the Tuckers, especially pulling ski-equipped trailers and a payload of approximately 2700 pounds. Under these harsh conditions, both machines still were able to average 3.2 miles per gallon in fuel consumption.

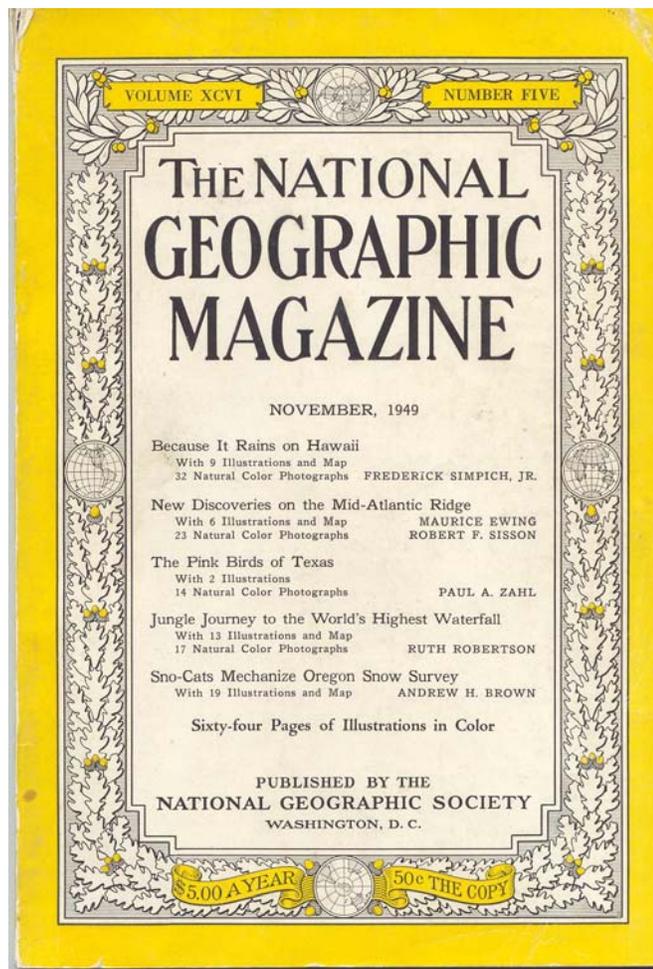
The entire route had been laboriously blazed the previous summer, using standard snow survey yellow and red arrow markers. In several cases the group lost the trail because of poor visibility or snow covered branches that obscured the markers.

When the temperatures warmed, snow stuck to the Tucker's front skis making forward progress and steering nearly impossible. In many instances snow conditions were such that side-hilling was impossible so the uphill side of the trail had to be manually shoveled before the vehicles could proceed.



Although the trip concluded successfully on Friday April 19<sup>th</sup>, it was readily evident that it was not feasible to conduct the Oregon Cascade area snow surveys in that manner. It was felt however, that a single two-man crew could still measure the same snow courses by transporting the snow-cat by truck to different locations along the east side of the Cascades. The Tucker Snow-Cats proved their worth and some recommendations based on experience gained from this trip were applied to subsequent models.

The details of this extraordinary adventure were documented by Andrew H. Brown, in the November, 1949 issue of The National Geographic Magazine beginning on page 691. In addition to the narrative, there are 19 photographs and a map showing the route of travel.



Photographs used herein are courtesy of Mr. R. B. Branstead, and the USDA Natural Resources Conservation Service.

Don Huffman  
NOWCC-ACES  
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