

## Avalanche videos

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### INTRODUCTION

Two videos on avalanche safety were shown at the symposium. The videos were produced specifically for the areas shown, but some of the methods and practices are applicable to roads in other avalanche terrains.

The two primary objectives of any avalanche safety program on a road are: (1) to avoid avalanche encounters, (2) to maximize road availability. The intent of these videos is to encourage good operational practices that will achieve these objectives.

The videos are currently available, for a nominal cost, from the organizations that produce them, whose addresses are given below. Video systems differ in different lands, however, and additional costs may be incurred in converting the videos to another system.

Some background information on each video follows.

### NO STOPPING

*No Stopping* was produced by the New Zealand Mountain Safety Council. The title emphasizes that people crossing avalanche tracks should not spend any more time than necessary in the danger area. The video is based on experience during construction and maintenance of the Milford Road. This road crosses the southernmost part of the New Zealand Alps. The road was built to provide access to the tourist destination of Milford Sound. It is now also an important highway for the fishing industry.

17 km of road in the valley floor (500 to 800 m a.s.l.) can be hit by avalanches, which originate on snowfields up to 10 ha in area in mountains that rise to 2500 m a.s.l. above the road. The annual precipitation of 8000 mm falls mainly as snow above 1500 m during the winter months.

The road construction started in the 1930s. Part of the road runs through a 1200 m long tunnel that connects the Hollyford and Cleddau valleys. The tunnel portals are below large avalanche-starting zones. During construction, two separate avalanche accidents killed men at the eastern portal. Cars and buildings were also destroyed and a 100 m concrete extension of the tunnel was flattened by an avalanche.

H. W. Smith, the resident engineer during the latter stages of construction, reported his avalanche observations in *New Zealand Engineering* (Smith, 1947). This was the first scientific study of avalanches in New Zealand. He identified some important characteristics of the avalanche potential of the area. Later LaChapelle (1979), Fitzharris and Owens (1980) and Schaerer (1981) prepared various

published and unpublished reports and papers on the Milford Road avalanche problems.

Avalanche hazard increased with traffic volumes which now are up to 200 vehicles per day. This has contributed to numerous avalanche involvements, particularly of men working on the road. In 1983 the road supervisor was killed by an avalanche on the western side of the tunnel.

### AVALANCHE ALLEY

*Avalanche Alley* was produced by Alcan Aluminum Limited, a Canadian company headquartered in Montreal and one of the world's largest aluminum producers. Alcan has a major hydroelectric generating facility in northwestern British Columbia. Located some 700 km north of Vancouver, the project was started in the 1950s and is now being completed with the addition of further hydroelectric generating capacity. The company operates a large aluminum smelter at Kitimat about 85 km away from the power source at Kemano.

Now under construction is a 520 MW addition to the power generating facility. One of the main components of this project, to be in operation in 1994, is a 16 km tunnel to carry water through a mountain. The construction camp to house the men, and for access to the tunnel-boring machine inside the mountain, is located about 850 m a.s.l., above the community of Kemano.

In the two years of this operation monthly snowfalls have exceeded 5 m. Snowfields up to 10 ha in area above the road produce avalanches which have recently destroyed a bridge and in the past covered the adit work site. The avalanche paths above the adit are now controlled with artillery. This program objective is to keep the 12 km road safe and to facilitate on-time completion of the tunnel contract.

### ADDRESSES

The videos are available from:

#### NO STOPPING

Mr Alan Trist  
Executive Director  
New Zealand Mountain  
Safety Council  
Box 6027  
Wellington  
New Zealand.

**AVALANCHE ALLEY** Mr Les Holroyd  
Director of Corporate  
Information  
Alcan Smelters & Chemicals  
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1285 W Pender Street  
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## REFERENCES

Fitzharris, B. B. and I. F. Owens. 1980. *Avalanche atlas of the Milford Highway and assessment of the hazard to traffic.*

- New Zealand Mountain Safety Council. (Avalanche Committee Report 4.)  
LaChapelle, E. R. 1979. *An assessment of avalanche problems in New Zealand.* New Zealand Mountain Safety Council. (Avalanche Committee Report 2.)  
Schaerer, P. A. 1981. *Avalanche safety at the Milford Road, New Zealand.* Ottawa, National Research Council of Canada. (SPX Report 435 for the Ministry of Works and Development, New Zealand.)  
Smith, H. W. 1947. Avalanches. *N.Z. Eng.*, 2(5), 491–496.

*The accuracy of references in the text and in this list is the responsibility of the author/s, to whom queries should be addressed.*