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ABOUT CHAIRLIFTS AND THEIR RECORD.

By

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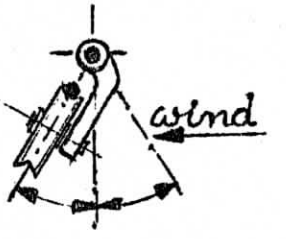
To my knowledge the first such lift in the United States was installed in Sun Valley, Idaho around 1937 by the American Steel & Wire Company, a subsidiary of U. S. Steel. When it ate the wire rope in no time, the supplier panicked into rubber. He added so-called "approach sleeves" to the rope clamps which sleeves hide the rope from inspection above every chair. This I consistently declined and in August, 1956 my fear came true: on their chairlift on Belknap Mountain, N. H., the wire rope snapped where hidden, killing one and hospitalizing eleven passengers.

Line sheaves lined with rubber or plastic, or any other perishable material cannot safely guide the liftrope at the towers, and therefore threaten us with rope derailments which makes the chairlift allergic to high winds from the side. The so-called "anti-derailment devices" offer only poor protection: when the running liftrope contacts the device things get brutal and a breakdown threatens. When at night high winds drive the rope into the device chances are this remains unnoticed and the damage occurs at the start-up in the morning. Electrical gadgets intended to automatically shut down the lift in case of a rope derailment may do so in time or too late for the prevention of damage and accident. If the lift comprises exceptionally few towers the gadgets are harmless. On a lift with numerous towers the locating of the trouble may take painful down time. Anyhow, beware of numerous gadgets.

All good things are simple and the time honored hingedly self-tilting arrangement shown in the sketch has proven merit. In World War I, for example, it decisively improved the performance of a great many military tramways. However, safe guidance of the sheaves by the liftrope itself excludes perishable linings, as easy to understand. Accordingly, the sheaves purr in operation. Regarding smooth ride, the arrangement compares favorably with railroads and streetcars. None of my chairlift customers has switched or intends to switch to rubber lined sheaves. One of them expressed appreciation that steel on steel prevents the passengers from falling asleep in the chairs.



The layout of the early chairlifts followed too slavishly the practice of the mining trams: few towers, huge spans and terrifying rope heights. If a rope derails at a tower, disaster will befall the fewer passengers the shorter the spans are on either side of the tower. If the spans are long the occurrence might well gain the proportions of a mass accident as threatening us through running wild of the chairlift.

Let me report first a few such incidents and accidents which came incidentally to my knowledge, while possibly many more escaped my attention.

Vermont 1941: Through excessive lubrication the liftrope slipped at the drive sheave. The drive machinery continued to function normally while rope, chairs and skiers jockeyed forward and backward.

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The baffled attendants stopped the drive machinery and lowered the skiers from the chairs with throw ropes and ladders. Not until the long rope had been thoroughly cleaned by hand was the public re-admitted.

Utah in the early forties: Due to alleged jamming of the take-up and warmer weather, the rope tensions at the drive sheave decreased and the chairlift suddenly reversed. An alert ski pro yelled "Jump", and all the skiers complied. No one was hurt in the deep snow.

Nevada in the early fifties: For reasons unknown to me, the chair-lift suddenly ran wild and gained considerable speed. A bystander in the lower terminal saved the day by jamming a piece of wood into the drive gear. He thereby stopped the lift so abruptly that the skiers were catapulted from the chairs. No one was hurt in the deep snow.

Michigan 1962: A shaft of the drive machinery snapped and the chair-lift reversed. Before the attendants succeeded in stopping the lift by means of the emergency handbrake, disaster befell the lower terminal: one skier killed (initial claim $165,000.), another one permanently incapacitated (initial claim $500,000.). Whether and on what terms the litigation ended I do not know.

The dreaded running wild stems from the so-called "overhaul loads" which are absent on horizontal chairlifts as well as on tow lifts where in case of reversing the skiers are forced to get off or else gently fall off because they are unable to ski backwards.

On an inclined chairlift the overhaul load works forward when downhill traffic exceeds uphill traffic, and works in reverse when uphill traffic exceeds downhill traffic.

As this sinister force increases with the grade of the convey-ance, I suggested back in 1957 that the code of the American Standard Association of New York should definitely limit the number of chairs per lift unit in inverse proportion to the grade. Also, I consist-ently advocate to build chairlifts much lower than usual so as to encourage instant jumping off when needed. I also recommend to discard foot- and arm-rests and to clear of rocks the ground below the chairs, and groom it with grass or shrubbery.

Even liberal liability insurance would hardly fully cover a mass accident killing for example 30 passengers and hospitalizing 70, in-including 35 on the danger list.

May this treatise help the individual operator to decide what serves him better, the luxurious or the safer and cheaper equipment.
