



## IMPROVED HARVESTING METHODS

### EQUIPMENT SURVEY NOTES

#### AERIAL SKIDDING BY GRAVITY

Movement of pulpwood and cordwood down hill on suspended wires or wire ropes over distances up to 700 feet is receiving considerable attention. Under the direction of A. Koroleff in Canada rather extensive experiments have been conducted. More recently limited tests have been made in the United States. These have centered around the use of a single line stretched between two points on a slope. Only a brief description of the procedure and equipment is presented here. Details of the Canadian experiments and resulting recommendations are given in the report listed in the reference at the end of this note.

A single strand of high tensile plow steel wire of 6 to 9 gage has been found most suitable. Since such wire is stiff a short length of small wire rope is attached on one end to facilitate anchoring. At the other end wire rope with a "come along" or grip on the free end is used on a hand-powered winch of about 1-ton capacity to tighten the wire.

Various types of fastenings to hook the sticks of wood to the wire have been tried. Most successful has been a 3/8-inch round iron pin with a short tapered point fastened to a depth dependent upon the species and size of wood as determined by experience (fig. 1). Generally the required depth is from 1 to 2 inches. When the snap is hooked on the wire and load released the wood is carried to the bottom of the slope. There the wood strikes a "buck pole" or other type of bumper knocking it off the pin and leaving the snap on the wire. Canadian experience indicates that one man can hook up about a cord per hour, but considering lost time and the time required to return snaps, daily production averages 6 to 8 cords of 4-foot wood. The cost of the equipment is about \$50 to \$75.

Additional multiple line systems used in Europe, as reported in Revue du Bois, Vol. 11, No. 11, appear to have merit and possible application in mountainous areas. Wood is placed across two or more parallel wires or wire ropes and slid down on them (figs. 2 and 3). Equalization of the tension of the lines is necessary, and this is accomplished by a pulley arrangement as shown in figure 3.

Bundles of cordwood are bound together with small saplings or forks (fig. 3) so spaced that they serve as guides to keep the bundles on the lines. Guides are also made of short pegs or limbs inserted between the sticks of wood. On very steep slopes the speed of the bundles is controlled by a light haulback rope attached to them. A four-line system using this method is shown in figure 2. This could be used with palletts.

These systems permit harvesting of timber from inaccessible pockets and eliminate horse skidding on steep slopes where it is particularly dangerous.

Reference: "Transport of Wood by Gravity Over Suspended Wire," by A. Koroleff and C. R. Silversides. August 1948. Woodlands Research Index No. 43 (B-8-g) Pulp and Paper Research Institute of Canada.

E. W. FOBES  
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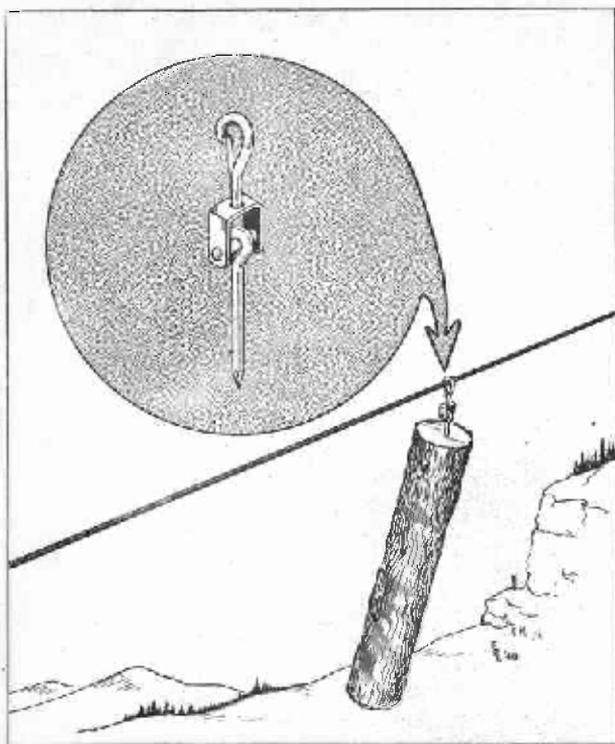


Figure 1.--Snaps and pins used for skidding wood over a single wire.

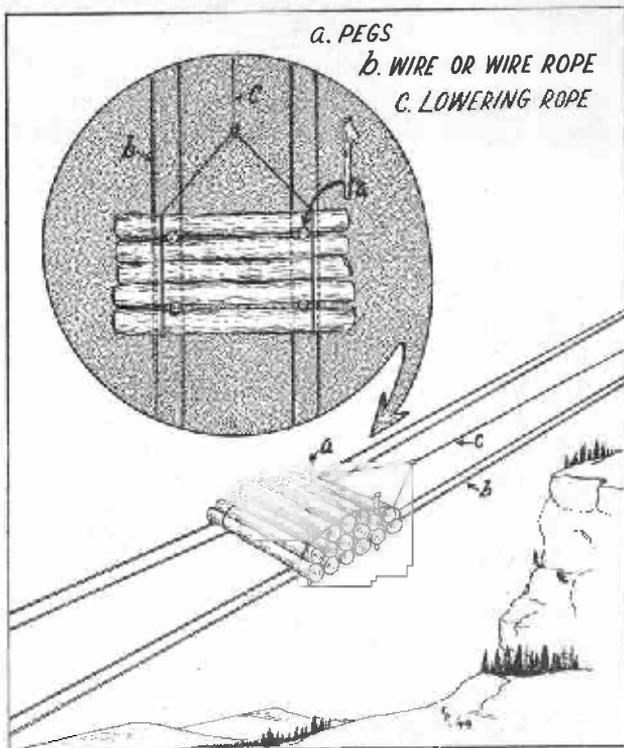


Figure 2.--Four-line system using a lowering rope.

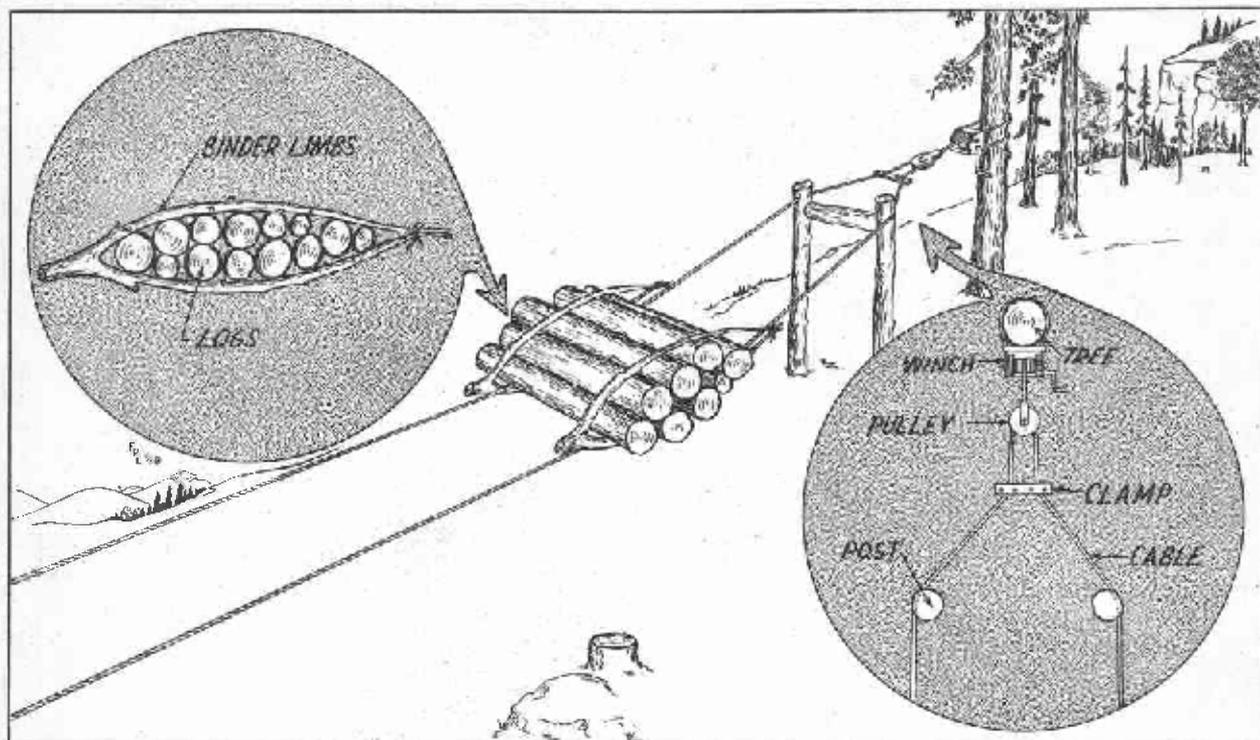


Figure 3.--Gravity skidding on parallel cables.