

Origin

Report No. 13 described the general layout and operation of the Forestry Commission power operated ropeway. The main criticism of the design was the time required to load the carriages with the hand-operated mechanical hoists then provided. A new method using the ropeway winch to load the carriages has now been produced.

Description

The two carriages are joined by a beam (see Photograph 1). The winch cable passes over a pulley on the upper carriage then descends to pass round a pulley on the lifting hook and returns to another pulley in the carriage. The cable then passes along the beam to the second carriage where it again passes over a pulley and again descends to pass over a pulley on the lower lifting hook returning to be fixed to the lower carriage.

Operation

1. Loading. The two lifting hooks are pulled down and attached to the chain slings on the load as seen at Photograph 1. The winch at the top of the hill then hauls in and the load begins to rise as seen at Photograph 2. As the weight on the two lifting hooks will not be equal one end rises first and one of the loaders leans on the lighter end to make the load rise roughly horizontally. Quite a high lift can be dealt with in this way by passing a rope over the light end of the load to hold it horizontal during the lift. The carriages are anchored to a standing tree during this operation to prevent their tendency to be pulled up the main cable by the winch rope. As soon as the load has been lifted up to the carriages, safety clips automatically grip the lifting hooks and the carriages with their load are ready to descend the main cable under the control of the winch (Photograph 3).
2. Unloading. On arrival at the bottom of the hill the carriages are anchored to a standing tree and an operator trips the safety clips

as seen at Photograph 4. The winch operator is then told by telephone to unwind and the load descends to the ground where it is unhooked. The winch operator then winds in and the lifting hooks rise up to the carriages which move off as soon as the safety clips have engaged.

Conclusions

This powered loading gear reduces the loading and unloading time to about one fifth of the time taken with the earlier hand operated gear and the physical fatigue is eliminated. It is not practicable where the ground is more than 20 feet below the carriages so it is not true to say that the loading gear can literally pick up at any point but on the great majority of sites there are few points on the ropeway where it can not be used.

R.G. SHAW

Machinery Research Officer.

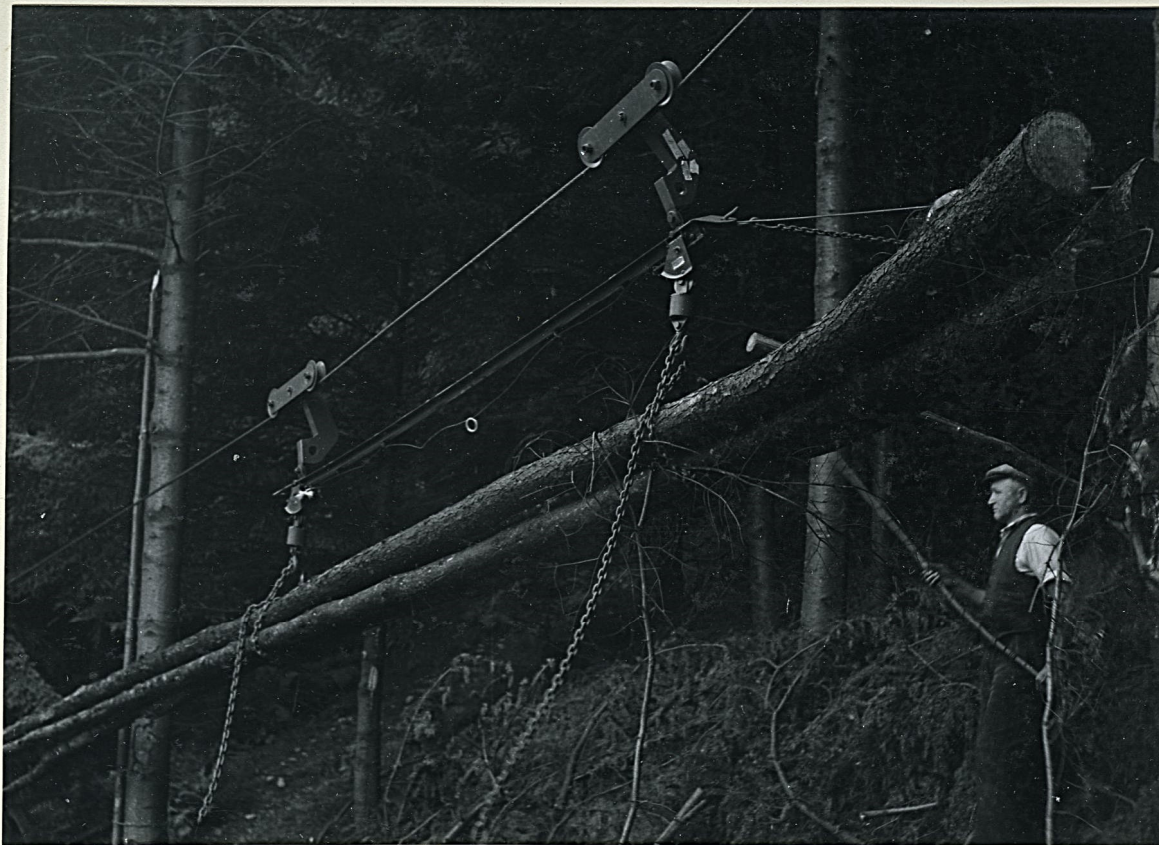
August, 1954.



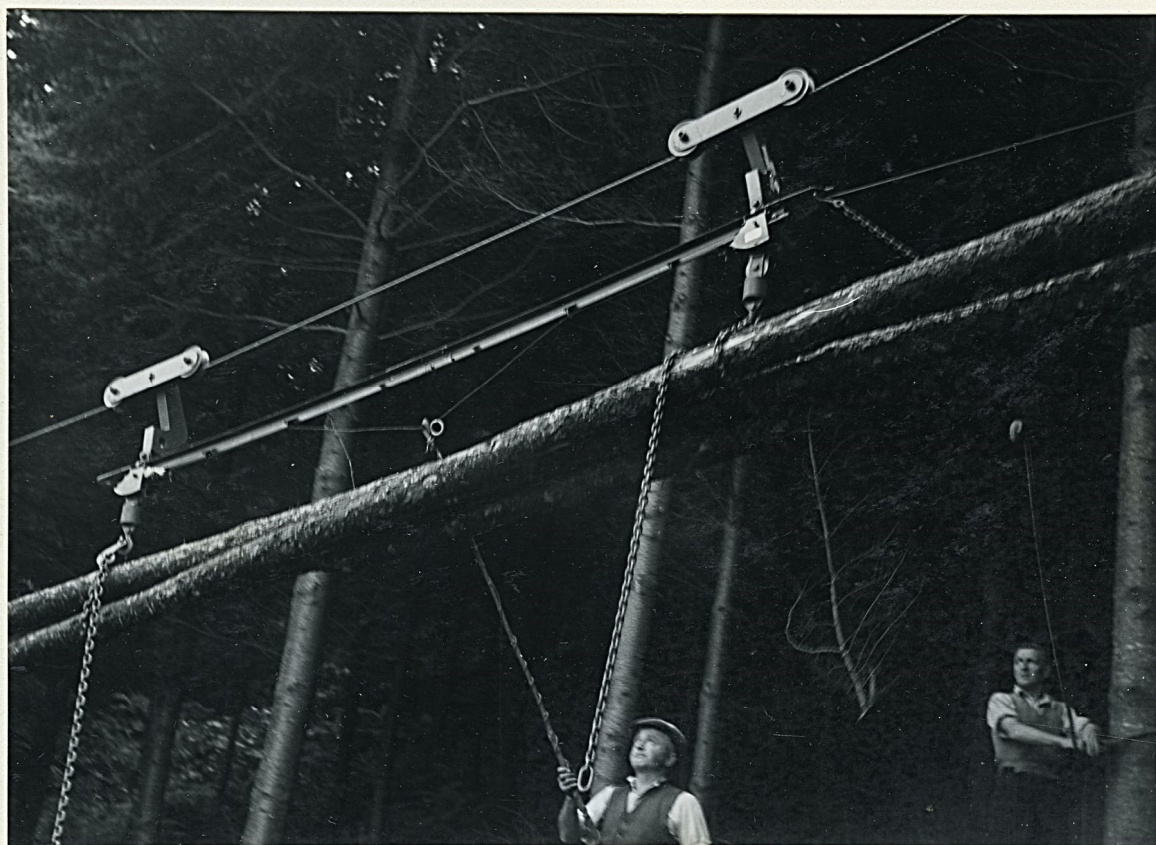
PHOTOGRAPH 1. Showing the lifting hooks pulled down and attached to the load ready for lifting.



PHOTOGRAPH 2. Showing the load being raised to the carriage.



PHOTOGRAPH 3. Showing the load lifted up to the carriage and ready for the run down the main cable (Note the automatic catches securing the lifting hooks to the carriages).



PHOTOGRAPH 4. Showing one of the operators tripping the release gear to free the automatic catches before the load is allowed to descend to the ground under the control of the winch.