

Report No. 49 on

Swiss Light Logging Equipment

Origin

Some recent developments in Swiss logging equipment are of interest in this country because they are aimed at the handling of light loads and are applicable to the handling of thinnings. They have been developed by the Swiss Research Institute at Zurich and the Central Forest Office at Solothurn where stocks of equipment are held for supply to their state and privately owned forests. Certain items of this equipment have been imported and they are described in the following paragraphs :-

Observations

1. General. The Swiss have standardised on 11 m.m. for their wire ropes for light logging. The British equivalent is 7/16th inch rope which has a breaking load of 4.9 Tons. To avoid the difficulty of handling long lengths in the forest they use their ropes in 25 yard lengths and join together as many sections as are necessary using the coupling hooks described at Observation 2.
2. Rope coupling hooks. These forged hooks are made so that they are instantly connected together as seen at Photograph 1. Owing to their particular shape they are very unlikely to come apart, as ordinary hooks do, when the rope is slack on the ground.
3. Quick release snatch blocks. A special block has been designed to allow room for the hooks described at Observation 2 to pass through.
4. Rope winding drum. To enable ropes to be coiled quickly and accurately in the forest a quick release winding drum has been designed. This drum is fastened to a tree and the rope wound on by hand. See photograph 2. The coil is tied to prevent it unwinding and then it is slipped off the drum by turning down the retaining bars. The rope can then be stored properly and tightly wound.

5. Rope grab. The need to be able to grip a rope at any point often arises. The Swiss have developed the grab shown at photograph 3.
6. The Kupfer winch. Light mobile winches are as much in demand in Switzerland as they are in this country. Whilst we have developed the very light powered winches which can be carried by hand the Swiss have favoured a very light winch which is self propelled on wheels. They probably both have a role in the extraction of thinnings and we are at present, with the consent of Mr. Steinlin the designer of the Swiss Kupfer, reproducing the general idea in a conversion of a Nash 3 wheeled tractor. The Kupfer is a 3 wheeled chassis driving on the two front wheels and is seen at Photograph 4. The winch drum is carried on the axle between the two front wheels and the drive can be engaged with either the wheels or the drum. The engine is an air cooled single cylinder 500 c.c. unit driving by flat belt to a 3 speed gearbox. The maximum pull in low gear is said to be over 4,000 lbs at 40 feet per minute and 750 lbs at 200 feet per minute in high gear. Road speed is up to 10 M.P.H.

In cases where the gradient is too steep for wheel grip the machine can winch itself into the most inaccessible positions as seen at Photograph 5.
7. The prices of the various items of equipment in Switzerland converted into Sterling at 12 Swiss frs = £ are:-

	£.	s.	d.
Rope coupling hooks	-	14.	-
Quick release snatch blocks	-	14.	12.
Rope winding drum	-	5.	-
Rope grab	-	3.	15.
Kupfer winch	-	450	-

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R. G. SHAW
Machinery Research Officer
February, 1956

1. Showing the rope coupling hooks. Note that they can only be engaged or disengaged when the two slots are in line. This almost entirely prevents the possibility of self unhooking when the rope is slack on the ground.



2. The Rope Winding Drum. The 6 retaining legs on the outside of the drum can be turned down (hinged at the hub) to allow the wound rope to be removed.

3. The Rope Grab. Note the parallelogram action of the jaws which increase their grip on the rope as the pull increases.





4. The Kupfer Winch.



5. The Kupfer winch winching itself up a steep slope.