

Conservation

I think this has a possible
use for the catwading of early
thinning in areas where
trees have been left below the
lowest planned road, or
pulling both up & down on slope
too steep for a horse to
work on.

When the ^{tree} water gap over
5 to 7 ft.
further ~~get~~ at an ~~intersection~~
it would probably be better
cheaper to use a bought-in
which moved on a wheel
base.

Shall we order one
for F.Y. 58 so that we can
carry out more extensive
work this late spring
start again.

1/24 RB

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Will you please discuss
with your views on definite
sites ~~where~~ this work may
offer more promise than other
methods.

Personally, I felt very lukewarm
about it.

Seen by Col B

20

24.4.54

Report No. 29

The Portable Power Operated Winch

Origin The handling of timber in the forest is often beyond the scope of manual labour and a power operated winch is required. Many tractor mounted winches are available but such equipment is expensive and there are some sites where there is not sufficient work to justify the heavy overheads and transport charges.

It has for some time been felt that a small portable powered winch which could be carried by two men and conveyed in a van would be a great asset for many of the smaller logging operations.

This report describes a winch which has been designed for this particular role and the conclusion is reached that it would be an economical source of power, for many applications.

Description

The specification of the winch is as follows:-

Engine -	350c.c. air cooled J.A.P.
Clutch -	Centrifugal
Cable -	5/16 diam. 300 ft. long.
Max-pull -	1500 lbs.
Speed -	70 ft. per min. (at Max.engine torque)
Overall weight -	3 1/4 cwts.
Price -	£190 in prototype form (this price is likely to be lower in production).

The winch being carried by two men is seen in Photograph 1.

Observations

1)-Field trials have shown that this winch provides a means by which power can be quickly brought to any part of the forest in a van or Land Rover. A team of two men can operate it as they can carry it into position and then one controls the winch whilst the other hauls out the comparatively light cable. Moving the winch from one point to another in the same area is, of course, slower than with a tractor mounted winch but these relative advantages and disadvantages can only be gauged by the size of the operation in hand.

2)-The winch is anchored either by attachment to a standing tree or to a ground anchor.

in the hand 3)-Tests have shown that 15 cu. ft. logs can be hauled with a direct pull whilst double this size of log can be hauled by doubling up on a snatch block. An example of a log being hauled by the doubling up process is seen at Photograph 2. The already well known system of a high lead can be used with great advantage on this light winch. (See photograph 3).

4)-The economics of using this portable winch can be calculated on an hourly cost of 3/- per hour against 8/- per hour for one of the smaller tractors with mounted winch. (Excluding operators in each case).

Assuming that the portable winch will work 30% slower than the tractor winch, excluding time taken to bring the latter to the site, an example might be calculated as follows:-

If there are 30 tons to be moved the portable winch would take 8 hours against 6 hours by the tractor mounted winch so the costs would be:-

Portable winch - 8 x 3 shillings - £1.4.0.
Tractor winch - 6 x 8 shillings - £2.8.0.

In this example the portable winch would also have to carry the wages of two men for the extra 2 hours involved i.e., 4 man hours at 3/- which is 12/- so the total on site charges would be:-

Portable winch - £1.16.0
Tractor " - £2. 8.0

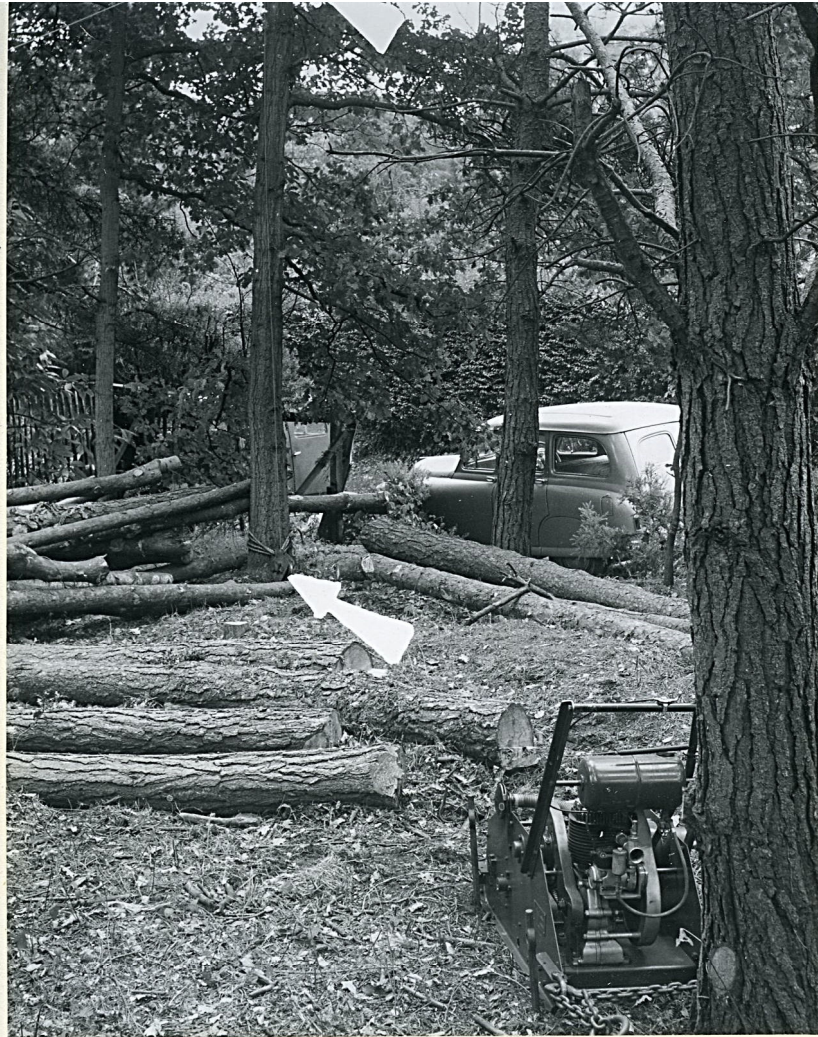
This leaves an "on site" saving of 12/- in favour of the portable winch. It must, however, again be mentioned that this saving is based on the assumption that the tractor winch will give 30% greater output per hour which may be wide of the mark under some conditions but the main advantage of the portable winch is the saving in time lost in loading and transporting to the site and subsequent return journey.

Conclusions

For many of the smaller logging operations the portable powered winch provides a convenient source of power at low capital and operating cost.

R.G. SHAW
Machinery Research Officer.

6th April, 1954



PHOTOGRAPH 3

An operation in progress using a high lead. Note the pulleys (marked by arrows) round which the winch rope passes to give the high lead.



PHOTOGRAPH 4

A typical logging operation completed with the portable winch. The logs have been collected from the far side of the railway line seen in the background. The size of some of the logs can be judged from the man standing on the left.