

Report No. 46 on

The Tub Sledge

Origin

The extraction of thinnings over soft peat tracks and rides has presented a problem for some time in the Border country. Horses find great difficulty in working under these conditions and wheeled tractors are unable to move. Tracked tractors can often only haul a load by winching up the load behind them and then going ahead paying out the winch rope, halting and again winching up. Timber dragged along the ground loses value through being dirty and also dragged in this way it offers great resistance to movement. To meet these conditions various sledges have been used and a special sledge known as the "Tub Sledge" has been devised and made locally.

Description

The Tub Sledge as the name implies is half a cylinder (or tub) which is made from  $\frac{1}{2}$  inch mild steel plate.

The open-side (across the diameter) is covered with a flat plate carrying a turntable and staunchions. Photographs of this sledge undergoing trials in comparison with a flat bottomed sledge are attached to this report. The load carrying capacity is 2 Tons.

Observations

1. The sledge is very robust and withstands impact on stumps and rocks.
2. A trial at Kershope to determine the pull required to haul the sledge in comparison with a conventional flat bottomed sledge both with a load of 1 Ton showed the following dynamometer readings:-

Tub Sledge - Flat bottomed sledge

On wet grass

1000 lbs.

800 lbs.

On peat with the top vegetation skimmed off

1500 - 2000 lbs.

1000 - 1500 lbs.

On deep churned up peat

1700 - 1900 lbs.

1600 - 1800 lbs.

(i) *R. Richardson*

(ii) *R. MacIntyre*  
*Obs. attached \* G.I.H.*

(iii) *R. Sloan*  
*Obs. attached \**

(iv) *A. Brimmer*

(v) *Miss O'Shaughnessy*

*\* Obs. attached to other copy of Report 1/15/11*

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From these figures it will be seen that the tub sledge offers no advantage over the flat bottomed sledge as regards resistance to movement over various types of ground encountered in the Kershope area. This result is only to be expected since the tub sledge by reason of its shape offers a far smaller area in contact with the ground to resist sinkage.

3. The method of securing the load on the tub sledge was good and it had the same advantage possessed by all sledges in being low and easy to load.

#### Conclusions

Since the effort required to move any load carrying vehicle is a main factor in assessing its value, the tub sledge must be regarded as inferior to the flat bottomed sledge. Once the peat has become thoroughly cut up there is very little difference between the two.

R. G. SHAW  
Machinery Research Officer  
November, 1955.

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1. The tub sledge with a load of 1 Ton. The hauling chains can just be seen attached to the front face of the sledge.



2. The two sledges seen together (the tub sledge on the right) ready for dynamometer tests on grass.



3. With the dynamometer inserted in the winch rope the pull required to move the sledge on badly cut up peat is being recorded on the dial seen in the hand of the man on the left.