

AHT

**'MOTOR
MULE'**

ATKINSON-HACKER TRACTOR CO. LTD.



ATKINSON-HACKER TRACTOR CO. LTD.

The **MOTORMULE**

The full Track Tractor designed to carry loads

Simplifies and speeds up transport in industry and agriculture, being invaluable for open cast coal mining, building, aerodrome construction, logging, manure-spreading, snow removal, and a wide variety of other work.



With articulated trailer

MOTORMULE

The full Track Tractor designed to carry loads

The Motormule is a full track tractor designed on an entirely new principle which enables it not only to pull loads, but to carry them. It greatly facilitates and speeds up such work as logging in mountain forests difficult of access, the transport and spreading of farmyard manures, fertilisers and lime, open cast coal mining, building, aerodrome construction, etc.

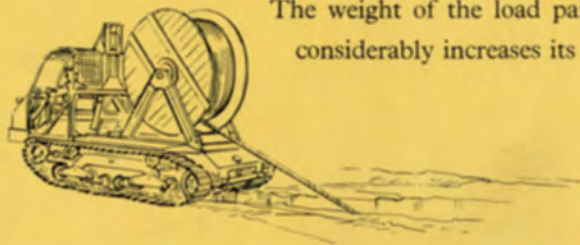
Owing to its exceedingly low ground pressure the machine can travel over the softest ground without damaging the swathe, particularly when fitted with the patent rubber-padded "Atkitraks". Its flexible track suspension follows the contour of the ground, thus making it possible to climb steep gradients with ease.



With self-loader

The Motormule is smaller, narrower and lighter than any other tractor of equivalent power.

The weight of the load partially carried on its back stabilises the tractor and considerably increases its adhesion.



Cable laying

MOTORMULE

How it can be adapted for different purposes

A winch mechanism has been incorporated in the design of the Motormule, and can be fitted as an extra, thus considerably widening the scope of its activities.



With snow plough



Passenger carrying on snow

Several types and widths of tracks can be fitted to meet the conditions in which the Motormule is required to work. Exceptionally wide tracks can be fitted to combat heavy snowfalls or swamps, medium tracks for agricultural purposes, and narrow tracks for use on hard ground as in quarries, etc.

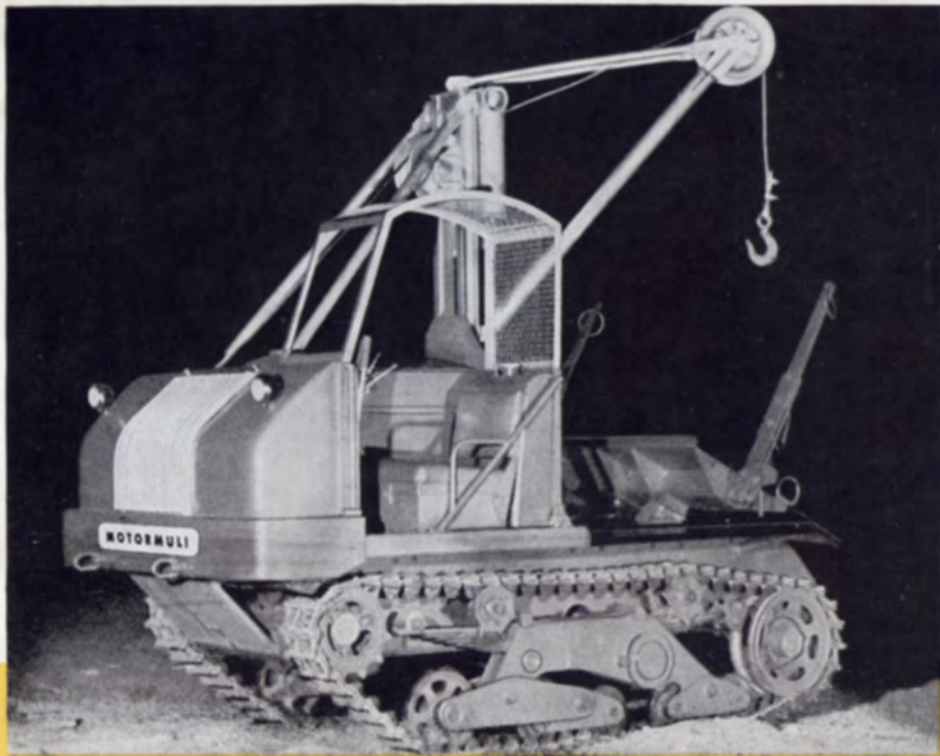
To enable the Motormule to operate on the road under its own power at a good average speed, an attachment can be provided for road wheels and steering axle. As this makes the machine highly mobile, the cost of this attachment can soon be recovered.



With turntable crane and winch



With heavy crane



MOTORMULE

With turntable, rope winch and loading crane

Fitted with front driving sprockets, the Motormule gives increased adhesion, clean sprocket teeth engagement, and protection against road shocks and de-railing.





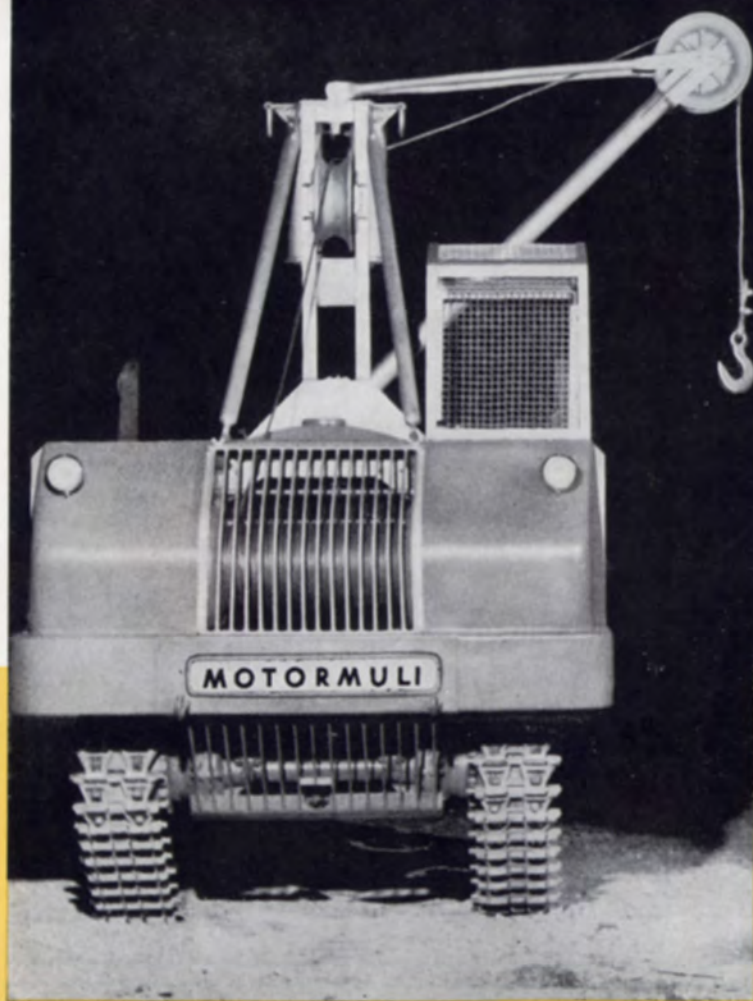
The Motormule winch, being driven from the normal gear box, gives an unusually wide range of speeds. The semi-automatic brake is an outstanding safety feature.

MOTORMULE

With rope winch, crane turned outwards



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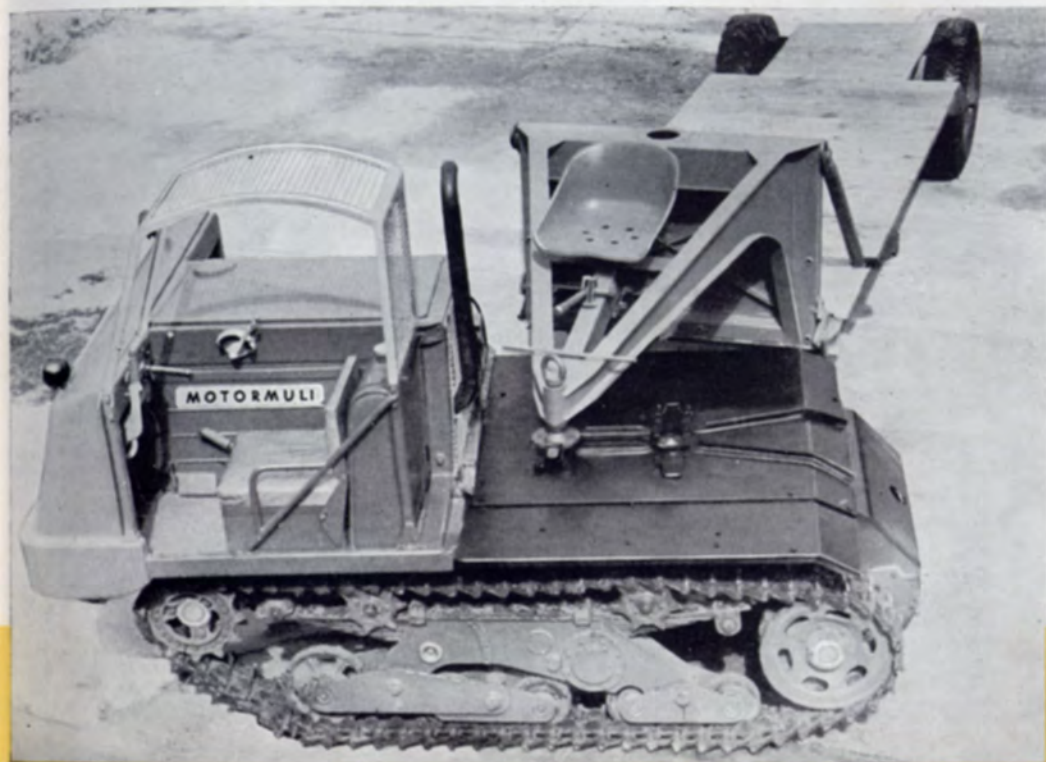
The Motormule winch, being driven from the normal gear box, gives an unusually wide range of speeds. The semi-automatic brake is an outstanding safety feature.

MOTORMULE

With rope winch crane turned outwards



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MOTORMULE

With semi-trailer loading platform

The Motormule offers
load-carrying facilities
—which is in itself
unique.



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MOTORMULE

With 283 cu. ft. timber on turntable

High ground clearance is a basic feature in the design of the Motormule, and the construction of the flat bottom boat chassis provides absolute protection against ground obstacles.

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MOTORMULE

With 353 cu. ft. log timber on semi-trailer, drag pan and sledge

Owing to its articulated load, the Motormule obviates the use of a logging arch, so that the dead weight payload ratio is outstanding. The ball and socket connections of the articulated load make the Motormule free from distortion, and facilitate easy handling.

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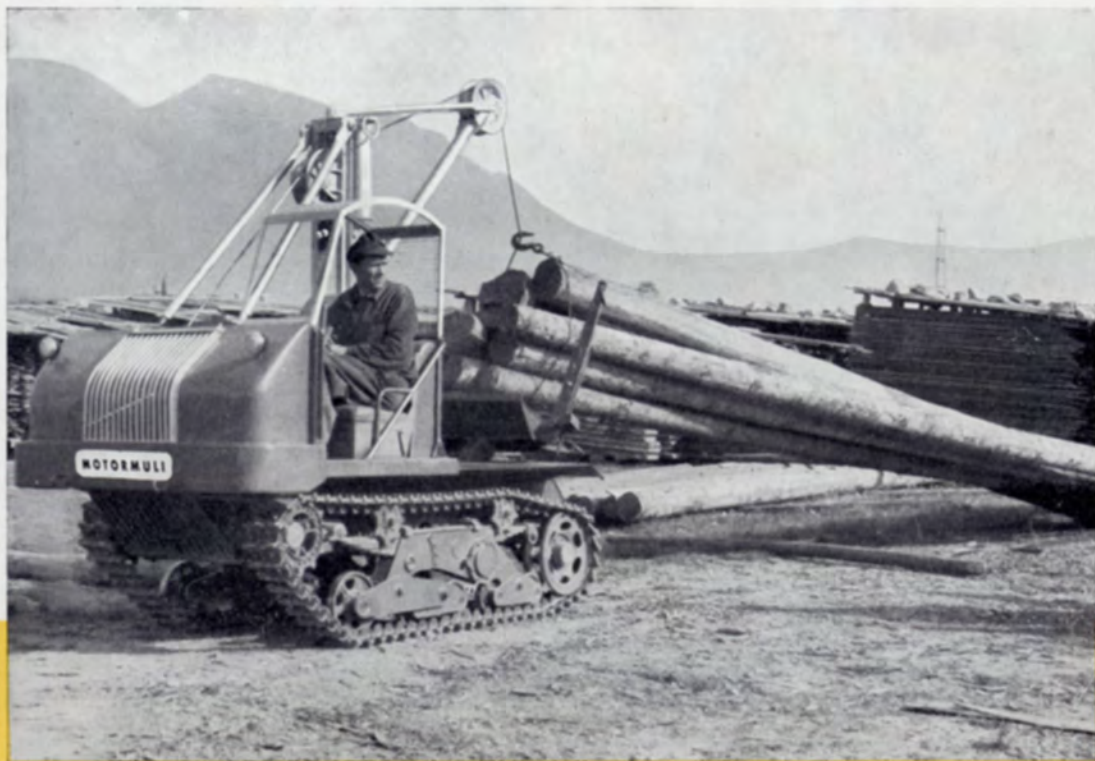
MOTORMULE

With 246 cu. ft. pulp wood on semi-trailer

The Motormule can operate in a more confined space than any other unit fitted with logging arch. Easy attachment of pre-loaded semi-trailer to the Motormule enables a shuttle service to be operated.

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MOTORMULE

Loading logs by means of winch and crane

The forward position of the winch on the Motormule enables the operator to load his commodities on to the tractor with a minimum of effort.

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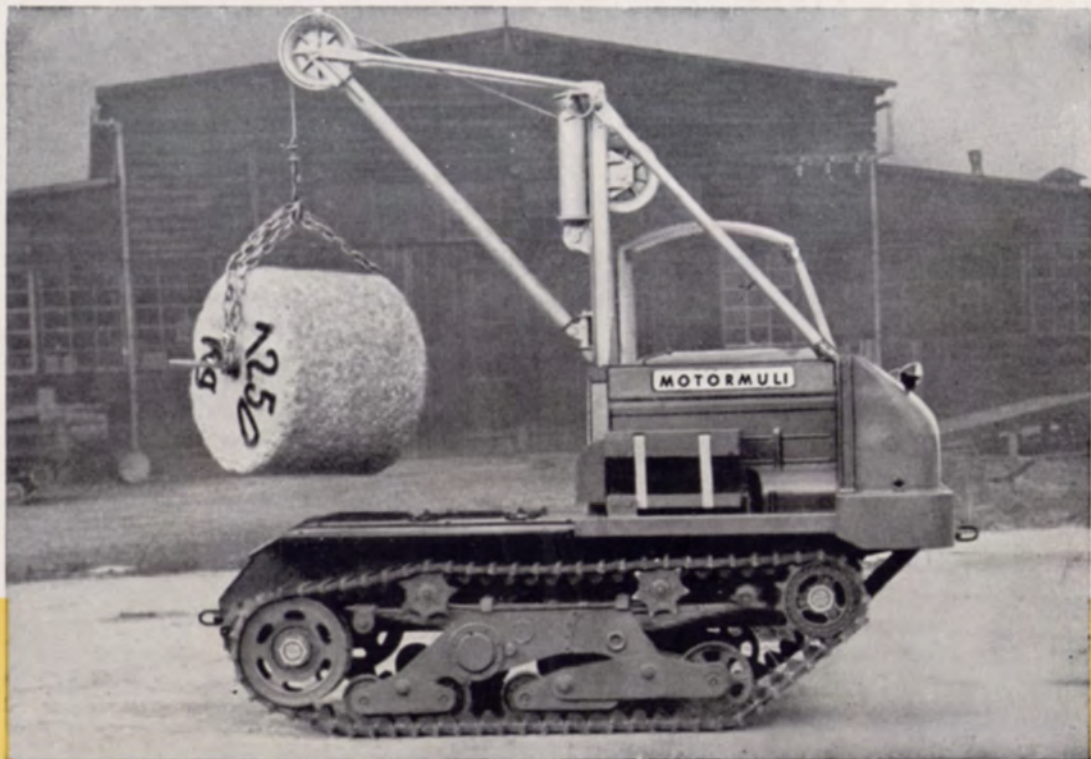
MOTORMULE

With rope winch and loading crane

The operation of the winch in all directions is an exclusive feature of the Motormule.

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MOTORMULE

With rope winch and loading crane

An important feature of the Motormule is the swinging jib which can lift loads on or off the tractor from either side.

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TECHNICAL INFORMATION

ENGINE

A diesel engine is fitted as standard equipment, but engines of alternative makes, either petrol, T.V.O. or diesel, can be fitted to suit customers' specific requirements.

POWER

The engine unit transmits its power through a normal dry plate clutch to the gear box. It is then transmitted to a transfer case fitted with independent steering clutches for each track. The power is then transmitted by propeller shafts to the driving sprockets which are mounted *at the front end of the vehicle*. This method of drive has been proved highly satisfactory and eliminates de-railing.

SPROCKETS

The driving sprockets have been placed well clear of the ground, thus preventing shocks and foreign bodies from coming into contact with the sprockets, as in the case of the orthodox type of unsprung rear driving sprockets.

IDLER AXLE

The idler axle is at the rear of the chassis. This also has high ground clearance to avoid contact with the ground surface.

RUNNING GEAR

The tractor is carried on flexible running gear fully sprung, and each side has independent vertical movement giving the vehicle adequate flexibility over rough ground at high speed. The running gear consists of five

RUNNING GEAR (continued)

independent bogey wheels run on separate axles and connected to the main beam. The main beam is fixed to the frame by a long semi-elliptic spring on each side which takes the weight of the vehicle and its payload.

This flexible running gear is superior to the orthodox rigid type, in that the track follows the contour of the ground, and can thus ride over such obstacles as small rocks and boulders without any undue shock, and without reduction in adhesion of the track to the ground. This unique design also enables the vehicle to operate over a wider range of speeds than orthodox tractors.

CHASSIS

The frame is constructed of a welded sheet steel into the form of a flat-bottomed boat chassis. This flat steel bottom offers protection to the engine, crankcase, gear box, transfer case and propeller shafts.

The forward end of the chassis carries the radiator, driver's compartment, battery, fuel tank and all controls, thus leaving the greater portion of the chassis length available for carrying the payload. This forward control position provides adequate room for the driver and gives him an unobstructed view. A roof structure can be provided for the protection of the driver.

A heavy section bumper is fitted over the full width of the machine and on it are mounted the cab breast plate and a rugged radiator grill. Strong mudguards, which form part of the loading platform, are fitted on each side.

ACCOMMODATION OF PAYLOAD

Commodities which are not unduly long and weighing up to 2 tons can be loaded directly on to the platform. This is useful for transporting gravel road mixers, concrete, cable drums, stone, compressor units, pumps, generating sets, etc., and other heavy equipment over fields and to hitherto inaccessible sites.

The platform is adaptable for the fitting of mechanism used in the spreading of manures, lime, fertilisers, etc., and also snow-removing equipment. These mechanisms are designed for easy fitment and removal thus leaving the vehicle available as required for other hazardous tasks.

Very long loads such as logs, pipes, girders, and beams can be accommodated as semi-trailer loads. This can either be done by the use of an articulated trailer or alternatively by loading direct on to a turntable at the rear of the vehicle. The latter method is used when the space is limited and it is impracticable to use an articulated trailer.

Two sets of turntables or articulated trailers permit pre-loading of one trailer whilst the other one is on its way to delivery point, thus providing a shuttle service with a minimum loss of standing time for the tractor. For the use of the turntable and semi-trailer a special ball and socket connection is provided on the platform of the Motormule.

In the case of the articulated trailer, this ball joint gives three-point support thus leaving the tractor free to move, easy to handle, and free from any undue distortion. In addition, behind the turntable or articulated trailer one or two skidding pans can be towed with additional payload.

When long loads are loaded directly on to the turntable of the Motormule, the rear end of the load can be carried on sledge trailing axle or on a dead track axle.

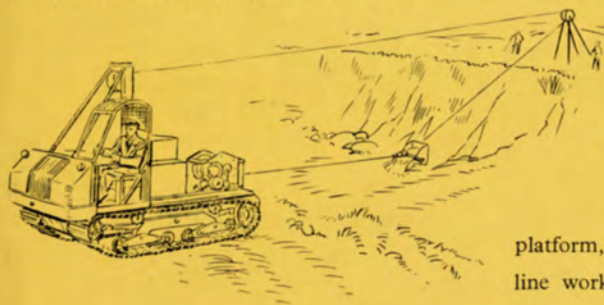
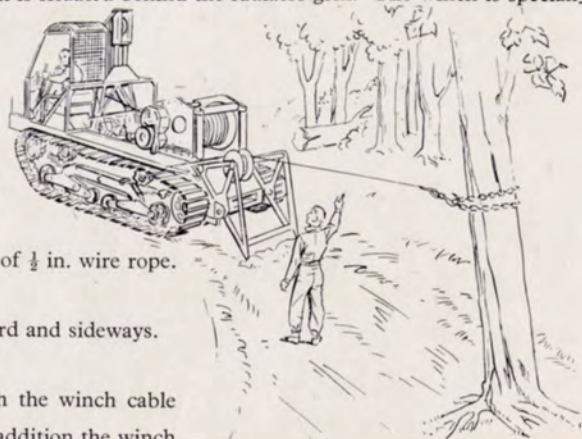
Big loads of unusual lengths and weight can be transported irrespective of the 2-ton limit on the tractor by correct placing of the dead axle under the load, thereby equalising the load between tractor and dead axle. Pit props, etc., are best transported on an articulated trailer with platform body and side ribs.

THE WINCH

As an extra the Motormule can be fitted with a built-in winch which is situated behind the radiator grill. The winch is specially designed for the Motormule and is driven from the offside propellor shaft through a power take-off. The speed of this winch can be controlled through the gear box giving it an unusually wide range of speeds. The winch brake is semi-automatic and is free during the winding process, but comes into operation immediately the winding ceases. It can be released by the operation of the winch brake lever. The drum capacity is 120 yards of $\frac{1}{2}$ in. wire rope.

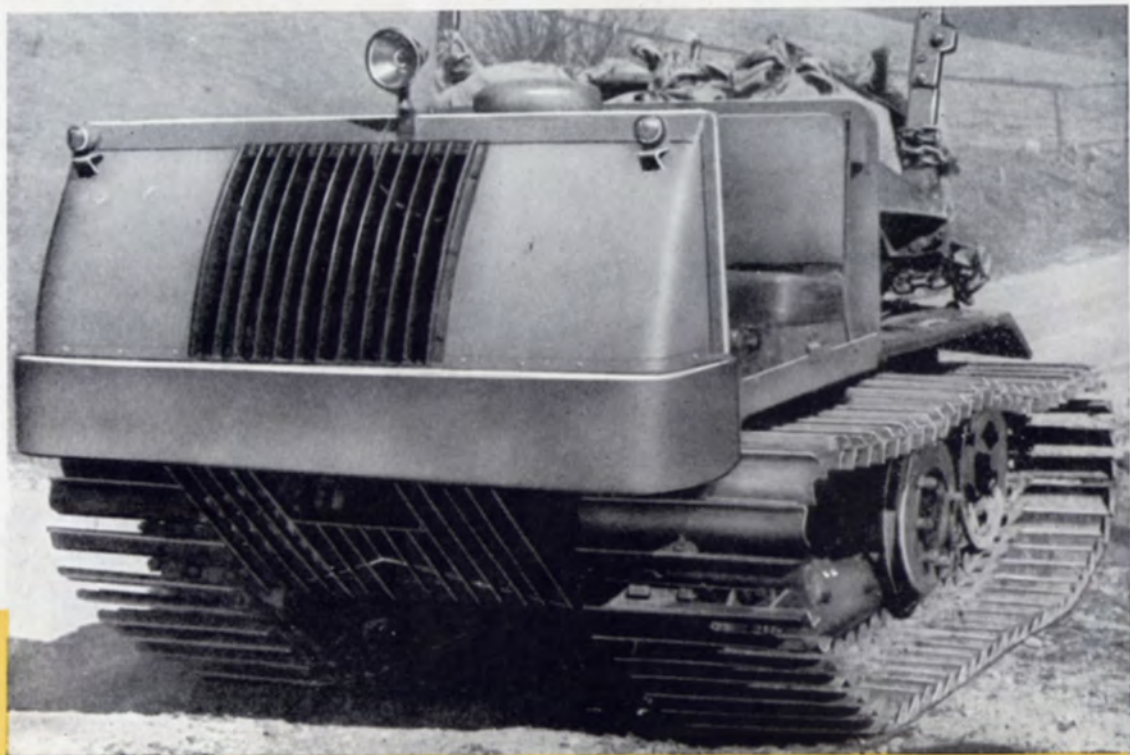
The winch cable can be operated in all directions, forward, backward and sideways.

A strong frame is provided to which is secured a shear over which the winch cable can be passed to the required direction protected by a fairlead. In addition the winch frame can be fitted with a loading jib which is capable of handling a lift of one and a half tons. This load can be lifted on or off the platform to either side of the vehicle.



In addition to logging the Motormule winch is extremely useful in lifting heavy equipment, vehicles, etc., and in the erection and repair of overhead cables and pipe lines, etc.

An additional heavy-duty winch can be fitted on the loading platform, thus offering valuable winch operation for land clearance, drag-line work, dredging canals, rivers, etc.



MOTORMULE

With snow or swamp track

The perfectly sprung and flexible running gear of the Motormule offers an unusually wide range of speed, especially when fitted with the patent rubber-padded "Atkitraks".

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MOTORMULE

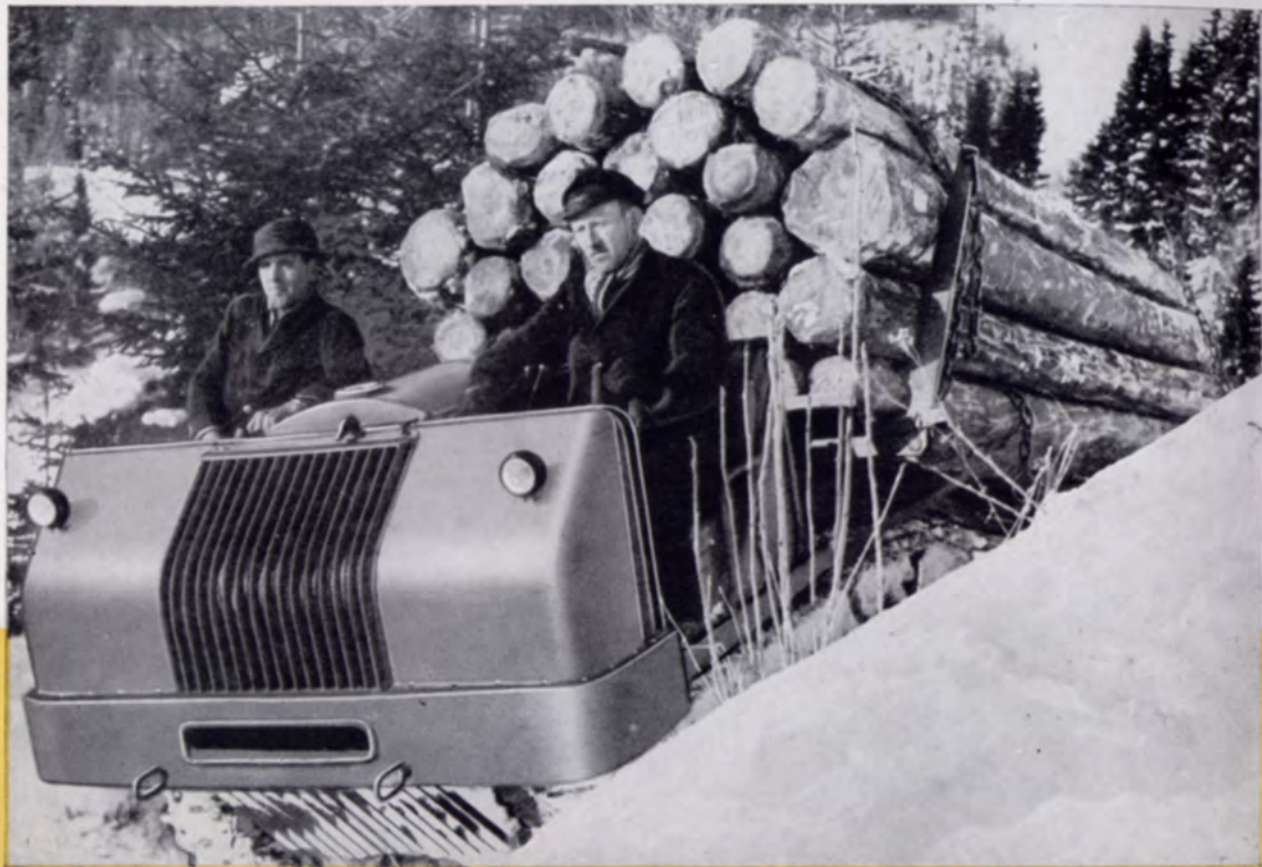
With snow track and semi-trailer

The Motormule achieves greater (logging) distances with maximum efficiency and economy by combining lower dead weight, higher speeds, lower rolling resistance, new loading speeds, shuttle services and articulated loads.

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CLITHEROE, LANCS.





MOTORMULE

With 283 cu. ft. logs going downhill

Far less effort is required to carry a load by the Motormule than the usual tractor and trailer needs to pull a load.



MOTORMULE

On steep hill going downwards

The unification of load and tractor creates unusual safety, even on steep down grades, preventing any knifing between load and tractor as is often the case with orthodox tractors and trailers.



MOTORMULE

With 283 cu. ft. pulp wood on steep hill going downwards

As can readily be seen from the illustration, the dead weight payload ratio is extremely high.



MOTORMULE

With 283 cu. ft. logs on steep hill going downwards

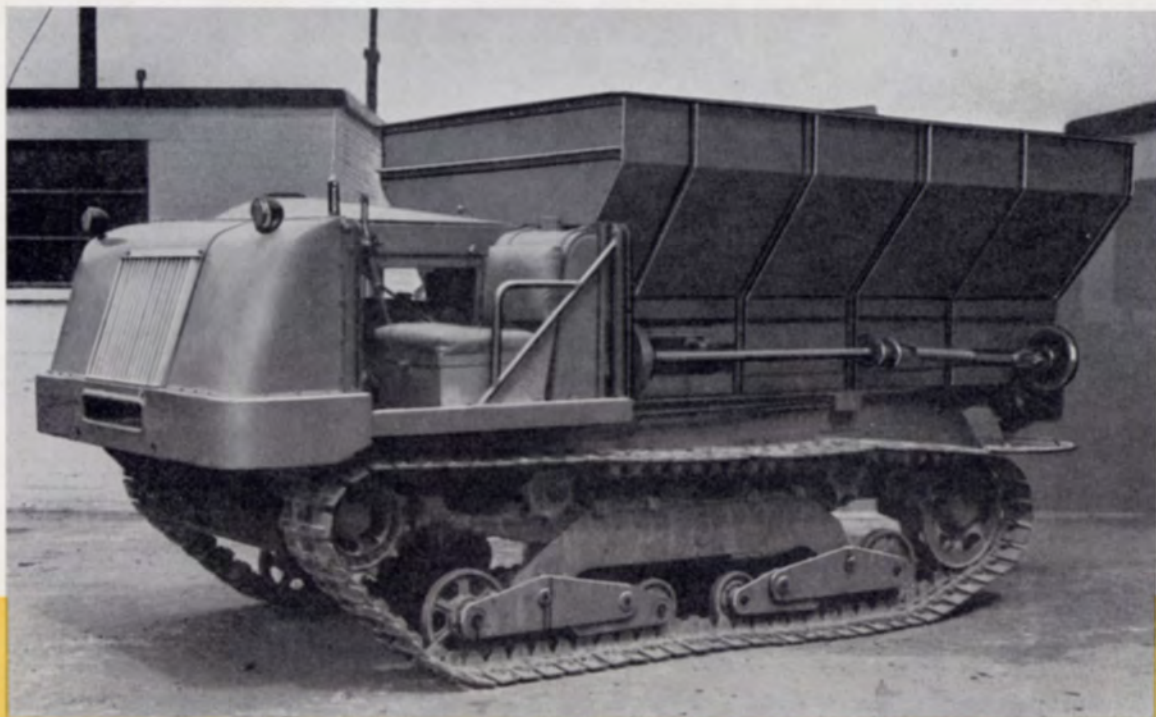
The Motormule handles the load gently, so that it reaches its destination in a clean and undamaged condition.



MOTORMULE

Turning steep corner with heavy load

The flat bottom of the Motormule chassis, its unusually high ground clearance and specially wide tracks, make it easy for the machine to penetrate deep snow and swamps.

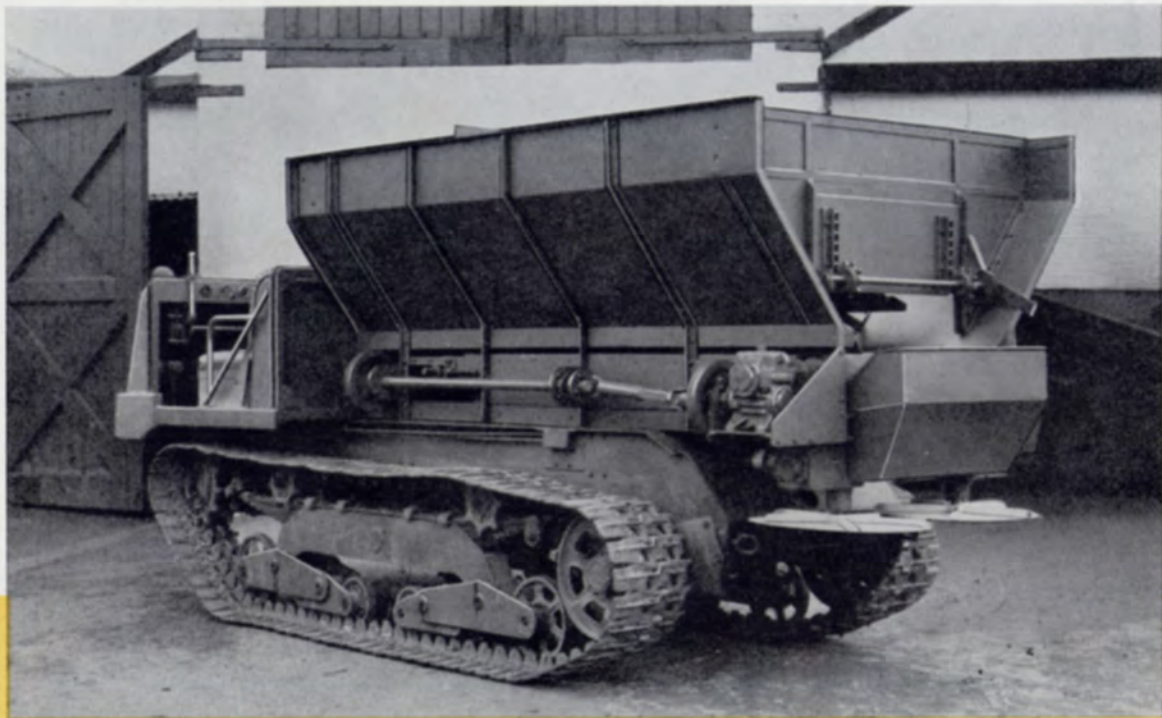


MOTORMULE FITTED WITH MANURE SPREADER

Fitted with Manure Spreader it is particularly useful for contract spreading on soft boggy ground and reclaimed land.

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MOTORMULE FITTED WITH LIME SPREADER

The application of this unit is highly suitable for spreading lime fertilizer in the most inaccessible places, particularly marginal land and hill farming.

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ATKINSON-HACKER TRACTOR CO. LTD. Clitheroe, Lancs.

Telephone Clitheroe 645-6-7.

Telegrams, Spreaders Clitheroe.