IGLAND

HIGH LEAD

SKIDDING

HAUL BACK
— — — HAUL IN
• • • • GUY

★ Winch e.g. Igland Special 4000/2
★ Tower — Towerblocks
★ Travelling block
★ Haul back line, max. 400m, 8mm
★ Haul in line, max. 150-300m, 8mm

★ Endblock w/fastening chain
★ Chain slings w/ hooks
★ Snap links
★ Guys

This additional equipment makes it possible to convert the ground skidding, double drum winch to a high lead unit. The tower, 2,5m (8 ft.) high, is mounted on the top of the winch. Various types of travelling blocks are available, depending on the operating conditions.
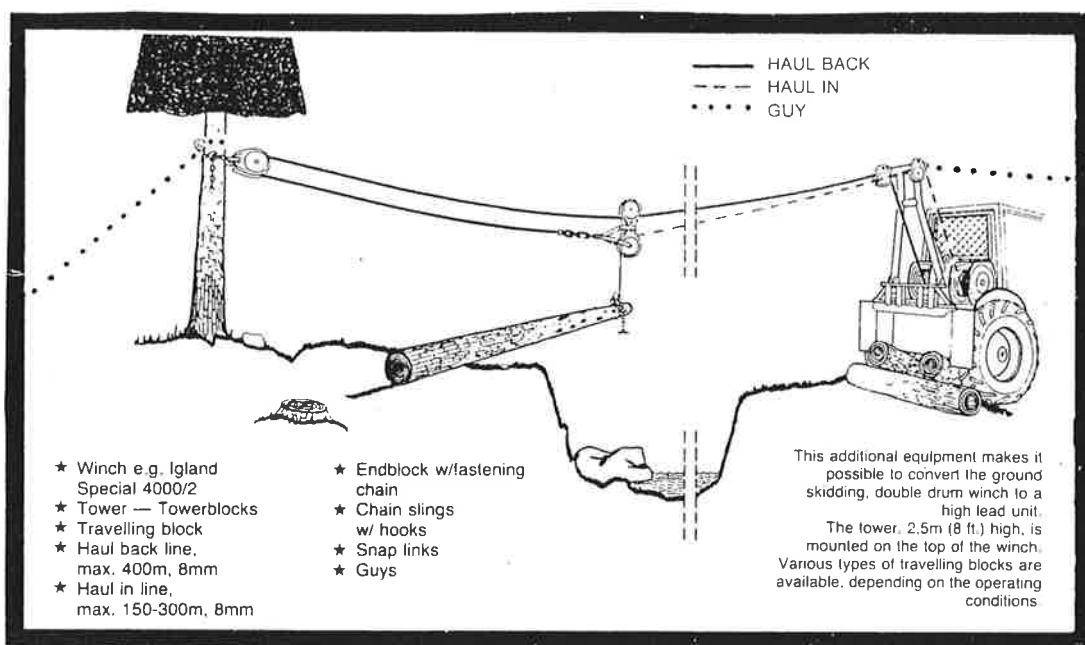
HIGH LEAD SKIDDING.

The principle of this system is that one drum winches in the "haul-in" (main) line with the load attached, and the other drum runs out the "haul back" line (See scetch).
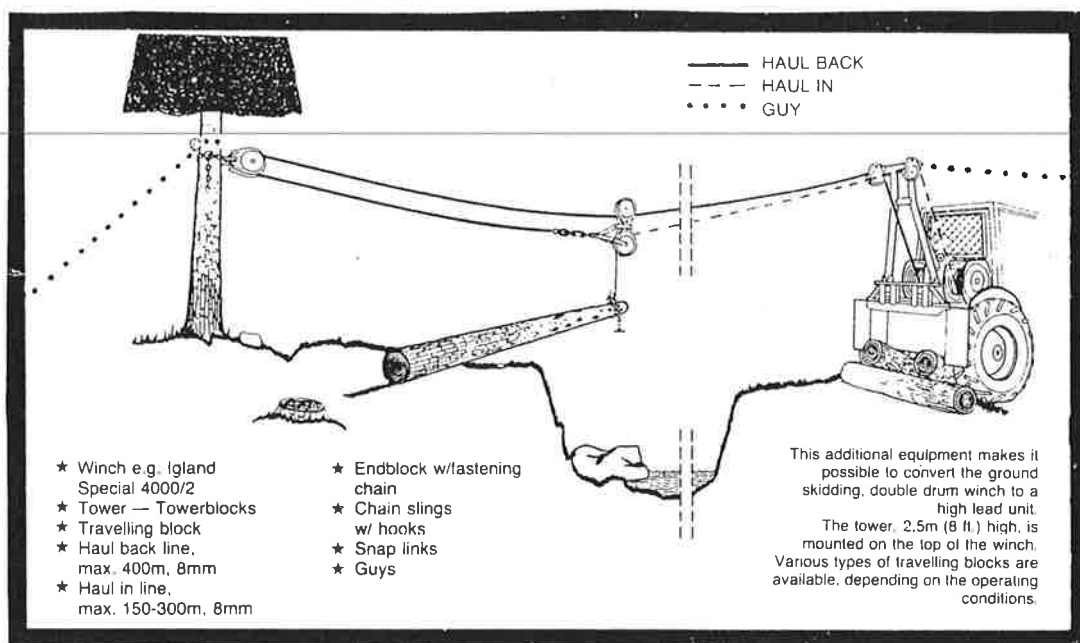
IGLAND A·S
4890 GRIMSTAD
Tlf. (041) 41 366

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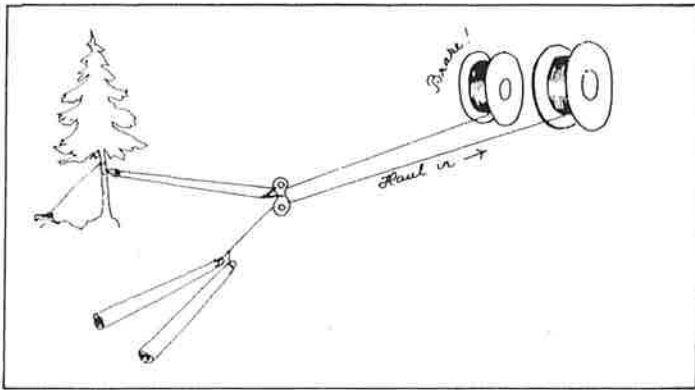
This operation involves engaging the clutch of one drum to pull against the brake of the other drum, i.e. when hauling in a load with the main line, an application of the brake on the "haul-back" line tightens the line and lifts the load. The carriage block on the end of the "haul-back" line allows the main line to be pulled by hand to either side of the extraction route for a distance of up to 18 to 28 metres (20-30yds). This distance being limited by the time and effort required to do so.

HIGH LEAD EFFECT.

This is the lifting effect obtained by elevating the pulley blocks at either end above the extraction route terrain, and keeping the wire under tension by running in one drum against the brake of the other. The normal maximum operating distance between tractor and tail block is 140 to 180 metres (150-200 yds). This is determined by the "highlead" effect which in principle persists for about ten times the combined height of the blocks.
See x-diagram.

PRINCIPAL

$10X$
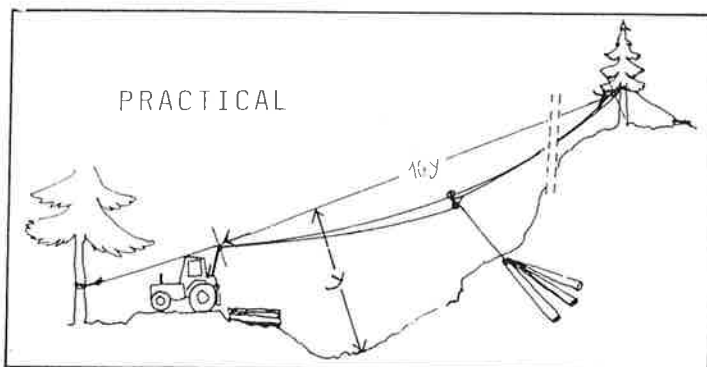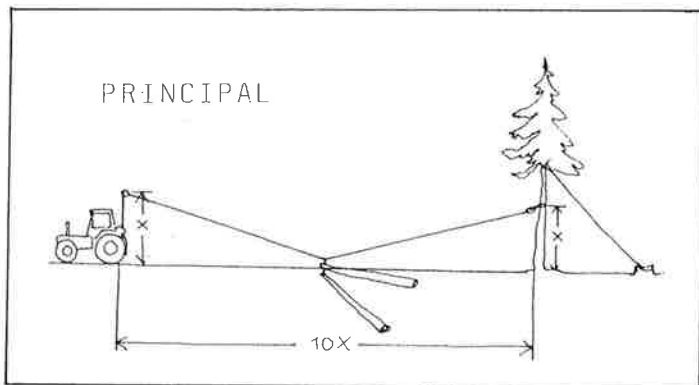
On a concave sloped extraction route the "highlead" effect will persist over a longer distance.
Ex.: $y=15m$ $10y=150m$ (approx.)
See y-diagram

PRACTICAL

$10y$

y: Height difference between the cable and the terrain.
10y: Approximately length of the rack.

THE WINCH

In extraction operations where the
winch will be used predominantly
for "highlead" skidding, it is re-
commended that the winch be geared
up by changing the P.T.O. sprocket
from the normal 19 tooth sprocket
to a 34 teeth one. This will in-
crease the winch speed and hence the
haul in time at the expense of
diminishing the maximum pull per
drum.

The sprocket

ANCHORS

A safe anchor for the tractor
is essential; the safest being a
large tree or stump to which the
guy rope should be fastened. Use
the original Igland locking device
for tightening the guy rope. The
anchor should be fastened as near
to the base of the tree as possible,
tightening up as far as possible
by hand, with the final tension
being put on by driving the tractor
against the anchor rope.
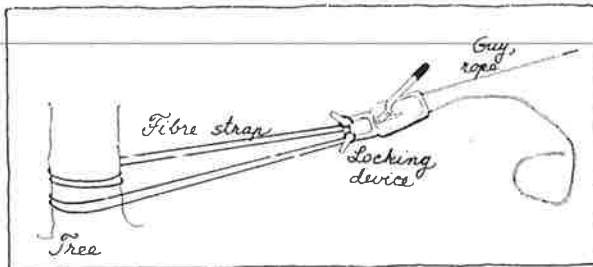
The anchor rope is attached to the
top of the tower.
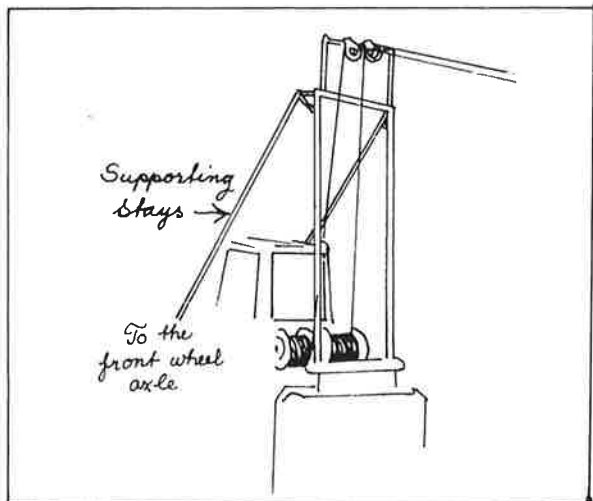
ATTACHING THE SUPPORTING
STAYS TO TOWER.

To ensure maximum efficiency and
safety, the most practical method
has been found to be an attach-
ment of supporting stays from the
top corners of the tower to the
front wheel axle on each side of
the tractor.
Fastening brackets are made indi-
vidually.

A solid
end spar tree

SITE LAYOUT

The racks must:
1) Terminate at a stacking site
   on the road.
2) Have a suitable spar tree at
   the far end.

3) Racks should be approximately
   18 metres (20 yds) apart to avoid
   the need for pulling the "haul-in"
   (main) line too far to the side
   or damaging surrounding trees.
   (Thinnings)
4) There should be suitable stacking
   space. Normally the woodlands at
   right angles to the road, though
   it can be swung parallel to the
   road.
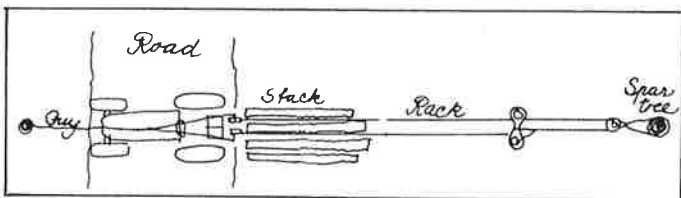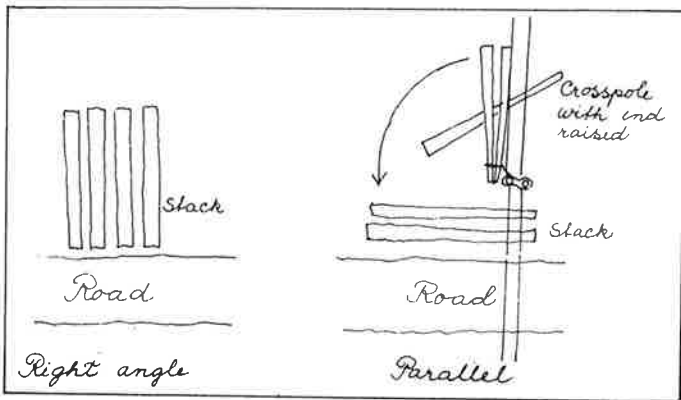
THE TRACTOR

The tractor, the main guy and the
extraction rack should be in line.
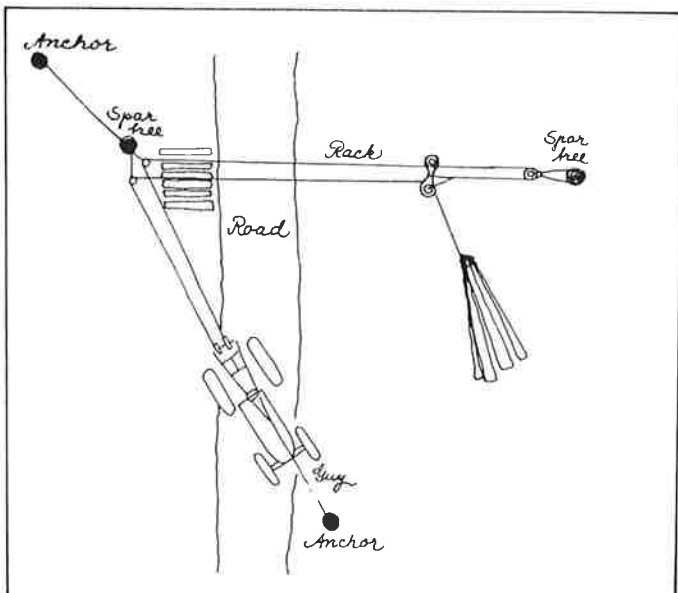
Where space is limited or where
stacking is required on the oppo-
site side of the road, a spar tree
on the opposite side of the road
can be used and the tractor par-
ked clear off the end of the
rack.

"Herring bone"

FELLING LAYOUT

When using tree length extraction
methods, the trees ideally should
be felled "herring bone" fashion in
relation to the extraction route.
When cross-cutting at the stump,
the lengths should be pilde in
piles of size suitable for one ex-
traction run. The ends of the piles
nearest the rack should be piled
on another log or similar object
in order that a choker chain can
be easily passed round the pile.
Ideally thepiles should also be
orientated "herring bone" fashion
in relation to the extraction route.
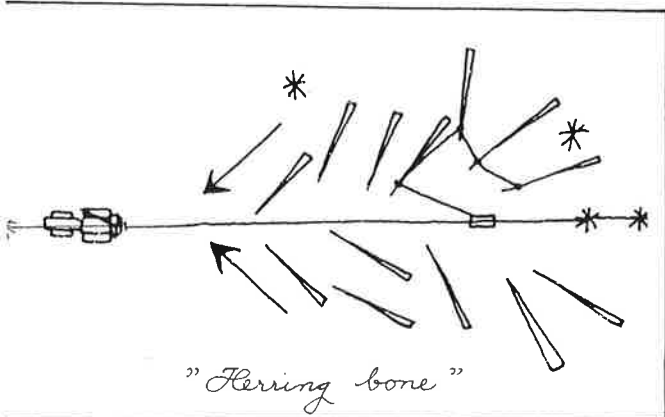
CHOKERING

For tree lenths too heavy to pile
manually, pull a chain through its
keyhole until there is ample to go
around the log. Pass the chain a-
round the log, catching the hook
on to the chain, then pull the chain
through the keyhole untill it is
right up against the log. Pull wire
and other chokers to other logs un-
till there is enough chokered for
one load. If the pieces are piled
together one choker chain can be
passed around as many logs as is
convenient or round which the choker
chain will reach. There are 5 ft,
and 10 ft. choker chains available.

- enough chokered
for one load
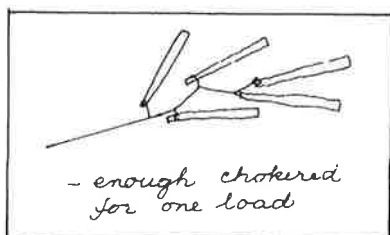
SNAP LINK SETS

This quick and efficient method
of joining ropes together on to
pulleys is used to great advan-
tage in "highlead" operations.
The snap link enables the "haul-
back" rope alone to be hauled out
to the "tail" block when setting
up operations, rather than having
to haul out a loop of the rope al-
ready connected on to the "tail"
block. Once the "haul-back" rope
is through the "tail" block, the
rope end is connected by means of
a snap link to the carriage block.

Snap link set
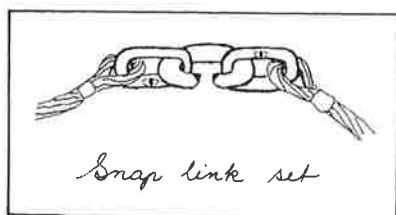
SEQUENCE OF OPERATION

A. PLAN AND DECIDE ON BEST LINE FOR RACK AND SPAR TREE.

B. SETTING UP (NORMAL 2 MAN OPERATION). SIMULTANIOUS PERFORMANCE.

Winch operator	Choker man
1. Decide on best location for tractor.	
2. Place tractor in position and assemble backstay to suitable ground anchor. Drive tractor back to tighten guy.	Pass "haul back" line through carriage block and pull it out to the spar tree, taking "tail" block as well.
3. Assist choker man if necessary by paying out haul back line. Main line brake on.	Rig tail block and guy rope. Return end of haul back line to carriage block and connect with the snap link set.
4. Pass main (haul in) line through carriage block and connect with snap link, choker length with keyholes, chokers and sliders fitted.	Return to site of first load ready for chokering up.
5. Tighten lines by operating clutch and brakes.	

CAUTION
Rope Spooling

Careless wire rope spooling, allowing the wire rope to foul the brake band will cause brake band distortion.
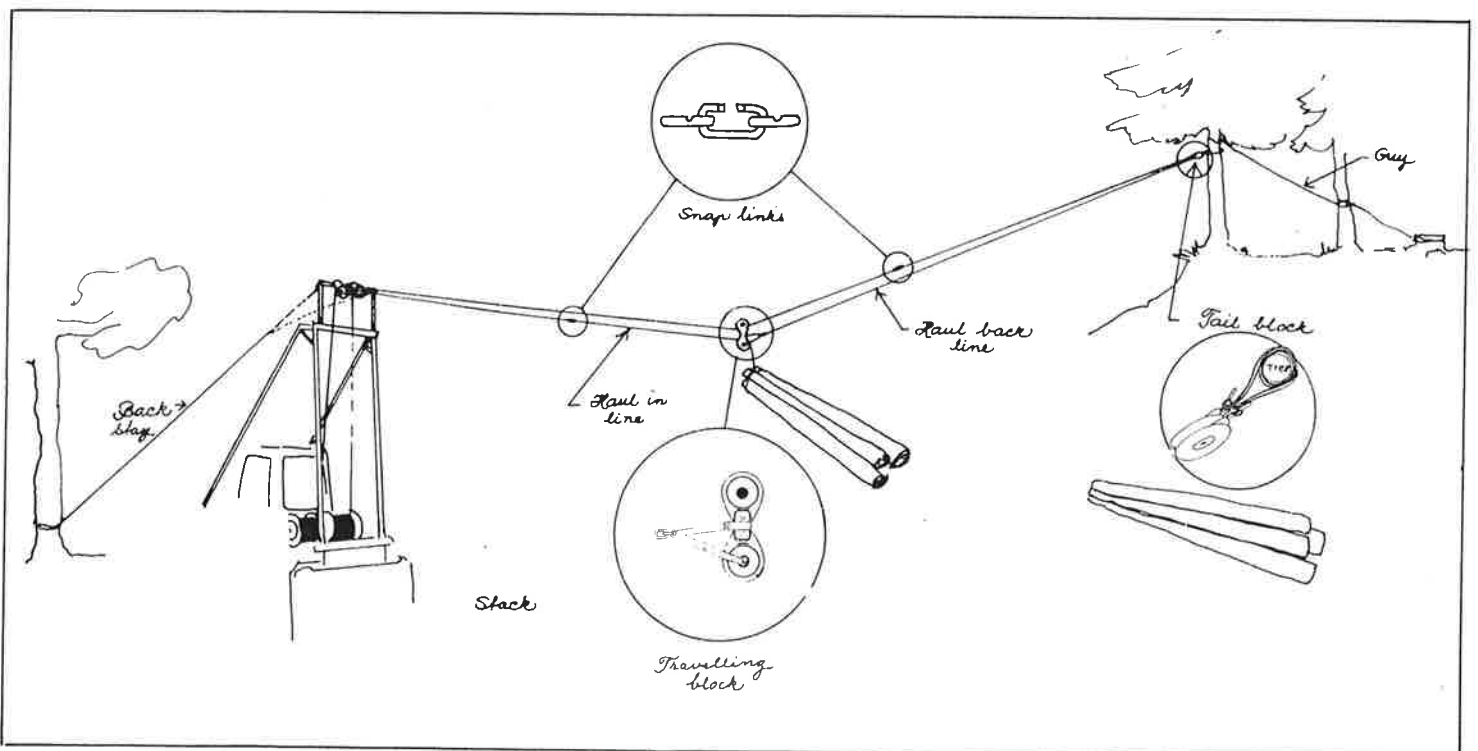
C. OPERATING

WINCH OPERATOR	CHOKER MAN
1. Engage clutch on haul back line and at same time disengage brake on main line enough to allow carriage to run free but not enough to allow main line to go slack. Keep carriage block clear of snags by tensioning wires with the main line brake.	Determine to be chokered. Signal "Stop" when the carriage block reaches the required position.
2. Apply haul back brake, disengaging haul back clutch. Free main line brake.	Haul out main line to the load.
3. Adjust stacking of last load as necessary.	Choker up load. Signal to winch operator.
4. Engage main line clutch and disengage haul back brake enough to allow load to run, apply brake enough to lift up front of load clear of any snags.	Check preparation of next load.

D. DISMANTLING (AFTER HAULING IN LAST LOAD)

Winch operator	Choker man
1. Dismantle main guy	Dismantle tail block and guy.
2. Winch in haul back line	Keep strain on line by walking with "tail" block.

THE STOP BAR.
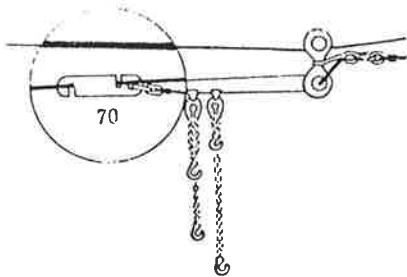
This is a device that can be attached to the main line for holding out the rope when travelling back to the chokerman. When highleading over long distances or uphill it becomes very difficult to haul out the rope any distance from the carriage block, this being because the chokerman not only has to pull against the winch but he also has to haul against the weight of the main line that has been hauled out from the block, and the friction of this rope where it touches the ground or runs over pulleys. The length needed by the chokerman is pulled out by the winch operator before the carriage is returned to the chokerman. The winch operator then clips on the stop bar at the carriage block end of the lenght in order ro stop the length running back through the carriage block.