

CUTTING ROPES – DRUM ENDS

The cutting of drum ends is not a legal requirement. The regulations however, do state that the engineer must examine the ropes once a month at intervals not exceeding 45 days.

If during this rope examination, the engineer observes that there is excessive wear at the crossover points, he may decide to have the drum ends cut to alter these crossover points. The procedure for cutting drum ends is as follows: -

The rigger in charge of the operation will be responsible to make the entry in the drivers logbook, the rigger will sign and the driver will countersign. The fitter and electrician will make pre-arrangements, make and sign their entries in the drivers log book and the driver must countersign.

Both riggers, fitter and electrician must then discuss the entire operation and working procedures and all the required signals with the driver. After both conveyances are loaded at the bank with the maximum load to assist in rope coiling for the dead layers,

The driver must: -

Reply to the signal 7 from the banksman.

The rigger will ask the banksman to ring the necessary signals to support the conveyance at the bank. (The RSJ support must be connected with rope slings to the headgear)

The driver must: -

Receive a mark signal 4-4 from the banksman. The driver will inform the fitter and electrician to disconnect the slack rope device and the rope monitor device.

(Bad Coiling, Load cells and/or Multicom I-coils).

The driver must: -

Reply the mark signal 4-4 to the banksman.

Receive the signal 4-2 to give more slack rope on the bank.

Stop on the signal 1 from the banksman.

The electrician must remove the e-cam transmitter from the winding rope.

The rigger and fitter will disconnect the rope from the conveyance taking precautions that the rope does not injure persons when uncoiling. This is done by placing a few slings or chains loosely around the rope and securing them to the headgear. This also prevents the rope slipping back over the sheaf wheel.

The driver must: -

Receive the signal 4-2 from the banksman to give more slack rope, and lower the rope connection onto the bank. Stop on the signal 1 from the banksman.

Reply the signal 1 to the banksman.

The fitter and rigger will remove the connections from the rope, secure the doubling down wheel to the conveyance, lace the rope through the doubling down wheel and secure the end of the rope high up in the head gear.

The driver must: -

Receive the signal 4-1 from the banksman to pick up the slack rope and remove the supports from the conveyance.

Stop on the signal 1 from the banksman.

Receive the mark signal 4-4 from the banksman.

The driver will mark the depth indicator (False bank mark \pm three turns below the bank mark) and request the fitter and electrician to reconnect the bad coiling and slack rope devices.

Disconnect the Lilly controller at the Vernier coupling and turn the controller until the winder trip out on the man over wind position at the bank.

The electrician must reconnect the vernier coupling of the Lilly controller.

The driver must:-

Depressed the backing out switch and reset the safety circuit of the winder.

Acknowledge the signal 7-7 to the banksman.

Receive the signal 4-2 from the banksman.

Lower the conveyance slowly to protect the rope because of a tight bend of the rope and the doubling down wheel bushes. (2,5 m/sec.).

Stop when signalled 1 by the banksman.

The rigger stops the driver when the conveyance is a few turns below the bank. The rigger marks the rope to warn the banksman when the conveyance approaches the bank after the rope has been cut.

The driver must: -

Receive the signal 4-2 from the banksman.

Lower the conveyance slowly. (Doubling down speed)

Stop the conveyance 3 turns from the lowest landing station in the shaft.

Inform the fitter and electrician to disconnect the depth indicator and Lilly controller at the vernier couplings.

The rigger will mark the winding rope in front of the drum.

The driver must: -

Lower on request from the rigger to double down until the ascending conveyance is stopped at the bank with a signal 1 from the banksman.

Receive the clutching and a clear signal from the banksman.

Test both brakes as described in module PCT and unclutch the top conveyance at the bank.

Lower the descending conveyance (single drum) at a reduced speed to uncoil the rest of the rope.

The driver must stop when three turns of rope is left on the drum. The rigger usually requests the driver to stop when only 1½ turns of rope is left on the drum.

The rigger will clamp the two winding ropes at the bank with a Reliance clamp or similar appliance. He places a mark on the rope to check for slip.

The driver must: -

Receive the signal 4-2 from the banksman for the rigger to test the clamping of the rope.

Lower slowly and stop when signal 1 by the banksman

Reply the signal 1 to the banksman.

The rigger will return to the engine room and will go to the front of the drum.

The rigger will signal to the driver by means of a bell, whistle or hand signals to uncoil the rest of the rope from the drum.

The driver will inform the fitter and electrician to disconnect the slack rope device and the rope monitor device. (Bad Coiling, Load cells and/or Multicom I-coils).

The driver must: -

Receive signals from the rigger to stop when the hawsehole is in the correct position for the rigger to disconnect and cut the back end of the rope.

Receive the clutching and clear signal from the banksman.

The driver must test brakes and un-clutch the conveyance for the rigger to work on while the other rigger will support the opposite conveyance at the bank.

The driver must:-

Reply the clutching complete signal 4-4-4 to the banksman.

Acknowledge the signal 7 to the banksman.

Receive signals to support the conveyance at the bank. (RSJ with slings)

Stop on the signal 1 from the banksman.

Receive a mark signal 4-4 from the banksman.

The driver informs the fitter and electrician to disconnect the slack rope and bad-coiling device on the conveyance at the bank.

The electrician will disconnect the slack rope device and the rope monitor devices (Bad Coiling) (Load cells).

The driver must:-

Acknowledge the mark signal 4-4 to the banksman.

The fitter and rigger will remove the connections from the rope, secure the doubling down wheel to the conveyance, lace the rope through the doubling down wheel and secure the end of the rope in the headgear.

The driver must: -

Receive the signal 4- 2 from the banksman to pay out more slack rope.

Stop on the signal 1 from the banksman.

Reply the signal 1 to the banksman.

Receive the signal 4-1 from the banksman to pick up the slack rope and remove the supports from the conveyance.

Stop on the signal 1 from the banksman.

Receive the mark signal 4-4 from the banksman.

The driver will mark the depth indicator (\pm three turns below the bank mark) and request the fitter and electrician to reconnect the bad coiling and slack rope devices.

Disconnect the Lilly controller at the Fernier coupling and turn the controller until the winder trips out on the man over wind position at the bank.

The electrician must reconnect the fernier coupling of the Lilly controller.

The driver must:-

Acknowledge the mark signal 4-4 to the banksman.

Depressed the backing out switch and reset the safety circuit on the winder.

Acknowledge the signal 7-7 to the banksman.

Receive the signal 4-2 from the banksman.

Lower the conveyance slowly to protect the doubling down wheel bushes and the rope because of a tighter bend. (Speed 2,5 m/sec.)

Stop when signalled 1 by the banksman.

The rigger stops the driver when the conveyance is a turn below the bank. The rigger will mark the rope to warn the banksman when the rope is coiled in and that the ascending conveyance is approaching the bank.

The driver must: -

Receive the clutching signal 4-4-4 and a clear signal 2-2 from the banksman.

The driver must clutch in and await instructions from the rigger in the engine room. The rigger will signal the driver to pick up the slack rope

The driver must: -

Raise the conveyance slowly and lower the conveyance on the opposite side. (Doubling down)

Stop the winder when the mark on the rope reaches the engine room.

Inform the fitter and electrician to connect the depth indicator, Lilly controller at the fernier couplings.

The driver must: -

Receive the signal from the rigger to proceed to the bank.

Stop the descending conveyance 3 turns from the lowest landing station in the shaft.

Inform the fitter and electrician to disconnect the depth indicator and Lilly controller at the fernier couplings.

The driver must: -

Receive the signal to lower from the rigger.

The banksman signals 4-1 to the driver to indicate that the ascending conveyance is near the bank. He does this when the mark on the rope reaches the bank.

The driver must: -

Stop the conveyance when signalled 1 by the banksman.

Act on signals from the banksman to support the conveyance.

The rigger and fitter will now remove the doubling down wheel and rope from the conveyance. New attachments are secured to the rope and attached to the conveyance.

The driver must:-

Receive the signal 4-1 from the banksman.

Move the winder slowly to pick up the slack rope.

Act on signals from the banksman to remove the supports from the conveyance.

Receive a mark signal from the banksman (temporary marks).

Notify the fitter and electrician who will adjust the depth indicator and Lilly controller.

Acknowledge the mark signal 4-4 to the banksman.

Proceed in the same manner to uncoil the second rope to cut the drum end as described previously.

Receive the clutching signal, second lowest level signal and a clear signal from the banksman.

Lower the conveyance slowly.

Stop the conveyance.

Clutch in and test both brakes separately.

Signal clutching completed 4-4-4 to banksman.

The maximum load is usually loaded into each conveyance before the task of cutting drum ends is commenced.

The driver must: -

Run the conveyance up and down the shaft for at least 2 complete trips.

This is done to get proper tension and coiling on the rope.

The driver must: -

Stop the winder on the previous temporary mark given at the bank.

Notify the fitter and electrician to disconnect the depth indicator and Lilly controller.

Receive signals from the banksman to position the conveyance at the bank.

Stop on the signal 1 from the banksman.

Receive the mark signal 4-4 from the banksman.

Advise the fitter and electrician to connect the depth indicator and Lilly controller.

Acknowledge the mark signal to the banksman.

Receive the clear signal and a call-over signal from the banksman.

Follow the same procedures to obtain a new bank mark, depth indicator and Lilly controller settings as described before.

The electrician will now connect and test the slack rope and rope monitor devices. The rigger, fitter and electrician will clear the entries in the logbook and the driver will countersign.

The shaft timber man will take over to assist in giving new marks.

Is the cutting of drum ends a legal requirement?

During rope examination, WHY will the engineer decide to have the drum ends cut?

Candidate _____

CUTTING ROPE - FRONT ENDS

Regulation 16.41.1 requires that a winding rope must have at least 3.7 meters cut from the front ends every six months. This piece of rope must be sent to a Government approved testing station to test the breaking strength. The procedure to cut front ends is that the conveyances must be loaded with the maximum load.

The driver must: -

Make pre-arrangements with the rigger, fitter and electrician.

Countersign the logbook entries made by these artisans.

Act on signals from the banksman to support the conveyance at the bank.

Receive a mark signal 4-4 from the banksman.

Inform the fitter and electrician.

The fitter and electrician will disconnect the depth indicator and Lilly controller at the Vernier couplings and also the slack rope device.

The driver must: -

Acknowledge the mark signal 4-4 from the banksman.

Receive the signal 4-2 from the banksman.

Move the winder until sufficient slack has been paid out on the bank.

Stop the winder when signalled 1 by the banksman.

Receive the clutching signal 4-4-4 the bank signal and a clear signal 2-2.

Test both brakes separately and if satisfactory,
Unclutch the drum at the bank.
Raise the other conveyance at clutching speed 2.5 m/sec to the bank.
Stop the conveyance when signalled 1 by the banksman.
Act on signals to support the conveyance at the bank.

Receive the mark signal 4-4 from the banksman.
Inform the fitter and electrician.
They will disconnect the depth indicator and Lilly controller at the vernier couplings and also the slack rope device.
The driver must: -
Signal the mark signal 4-4 to the banksman.
Receive the signal 4-2 from the banksman.
Lower the drum until sufficient slack has been paid on to the bank.
Stop the winder when signalled 1 by the banksman.
Acknowledge the signal 6-6 to the banksman.

The rigger will secure the ropes loosely by means of slings, which are fastened to the headgear. This is done to prevent persons being injured and the rope slipping back over the headgear sheaves when the attachments are disconnected from the conveyances.

The rigger will cut both front ends and re-splice the ropes to be re-connected with new attachments to the conveyances.

The driver must: -
Acknowledge the signal 6-6-6 to the banksman.
Receive the signal 4-1 from the banksman.
Raise slowly to pick up the slack rope.
(Pre-arrangements conveyance No 1).
Stop the winder on signal 1 from the banksman.
Receive the mark signal 4-4 from the banksman.
Inform the fitter and electrician who will re-connect the lily controller and depth indicator (this is a temporary bank mark).
Signal the mark signal 4-4 to the banksman.
Receive the clutching signal 4-4-4, and a clear signal 2-2 from the banks man.
Test both brakes separately and if satisfactory, unclutch the pre-arranged drum.
Reply the clutching completed signal 4-4-4 to the banksman.
Receive the signal 4-1 from the banksman.
Raise slowly to pick up the slack rope. (Pre-arrangements, conveyance No 2).
Stop the winder on the signal 1 from the banksman.
Receive the mark signal 4-4 from the banksman.
Inform the fitter and electrician who will re-connect the Lilly controller and depth indicator (this is a temporary bank mark).
Signal the mark signal 4-4 to the banksman.
Receive the clutching signal 4-4-4, bottom level station signal and a clear signal 2-2 for banksman.
Test both brakes separately and if satisfactory unclutch the drum.
Lower the pre-arranged conveyance to the bottom level.
Clutch in and test both brakes separately.
Signal the clutching completed signal 4-4-4 to the banksman.
Receive clear signal 2-2 from banksman.
Run the conveyance up and down the shaft for at least two complete trips, stopping at each conveyance on the bank.
The banksman will now off load the maximum load from each conveyance.

The driver must: -
Run the conveyance at least two complete trips up and down the shaft.
Stop the winder on the temporary bank mark given previously.
Advise the fitter and electrician who will disconnect the depth indicator and Lilly controller.

Receive the signal 4-1 or 4-2 from the banksman to raise or lower the conveyance to the correct bank mark.

Stop on the signal 1 from the banksman.

Receive the mark signal 4-4 from the banksman.

Inform the fitter and electrician who will re-connect the depth indicator and Lilly controller (this is the permanent bank mark).

Acknowledge the mark signal 4-4 to the banksman.

Receive the clear signal 2-2 from the banksman.

Raise the other conveyance to the bank.

Follow the same procedures as described above to obtain a new bank mark, the fitter and electrician will re-connect the depth indicator and Lilly controller. The electrician will re-connect and test the slack rope device.

Both the men and material over wind trips must be tested. The results must be recorded in the driver logbook.

The artisans must clear the entries in the driver logbook and the driver must countersign.