

ROPE EXAMINATION

INTRODUCTION

To ensure that the winding ropes are in a good condition and that any faults or defects are discovered with the least delay, certain examinations are carried out at regular intervals. (Refer to reg. 16.74.1)

These are described as follows: -

1. DAILY EXAMINATION

The rigger must sign the driver's logbook and make pre-arrangements for this examination to check the condition of the winding rope, the driver must countersign the entry.

The rigger will check the rope in the shaft by visually examining the rope at the bank while the winder is being used for normal winding. He checks for any kinks, broken strands or wires and a lack of lubrication, which requires his immediate attention. The rigger will then go to the engine room and advise the driver that he intends to carry out his rope examination. While the rigger remains in front of the drums,

The driver must: -

Request clear signals from the banksman and onsetter.

Receive a signal to move the winder. E.G. hand signals, air whistle or bell.

Move the winder through the shaft at a speed determined by the rigger during the rope examination.

Stop the winder when signalled by the rigger.

Mark the depth indicator and drum, on request of the rigger.

Stop the winder when the ascending conveyance reaches the bank.

On a request from the rigger do a trip in the opposite direction?

Stop the winder when the ascending conveyance reaches the bank.

During these two trips, the rigger will visually check the coiling, poor flange crossovers of the rope, broken stand wires and a lack of lubrication. When the winder is stationary the rigger will examine the crossover wear at the hawsehole, clamping and clove hitch knot inside the drum.

2. MONTHLY ROPE EXAMINATION BY THE ENGINEER.

The regulation requires the engineer to carry out an examination on the rope at least once a calendar month during a period, which may not exceeds 45 days. (Refer to regulation 16.75.3). Where sufficient shaft covering for both compartments is available the engineer will examine both winding ropes at the same time.

The driver must: -

Make pre-arrangements with the engineer and rigger, they will indicate to the driver which places to select for the purpose of this monthly examination. (E.g. 20 turns after 5 from the splice). Ask your Instructor.

Countersign the entry made by the engineer and rigger in the driver's logbook.

Obtain clear signals from the banksman and onsetter; the driver must clutch the winder for the bank and the lowest man landing station in the shaft. (Full length of wind every month).

Acknowledge the signal 7 to the banksman.

The engineer will now examine the conveyance and its attachments, as well as the connections between the conveyance and the winding rope.

The driver must: -

Acknowledge the signal 7-7 to the banksman.

Receive the signal 4-2 from the banksman.

Lower the conveyance slowly until stopped with a signal 1 from the banksman when the rope splice is at the bank.

Acknowledge the signal 6-6 to the banksman.

The banksman will position the shaft covering or platform over both compartments and the engineer will examine the splice and the opposite winding rope at the same time.

The engineer checks for any reduction in the circumference, any variation in the length of lay, and the superficial condition of the wires as to wear, corrosion, fractures and brittleness. Rope lubrication, deformation of strands and any indications of kinks in the rope.

The driver must: -

Acknowledge the signal 6-6-6 to the banksman.

Receive the signal 2 from the banksman.

Lower the conveyance on the speed locked in the driver's logbook. (Pre-arrangements)

While the rope is moving past the bank, the engineer will check visually the condition of the rope. The pre-arrangements made with the driver include the number of drum turns on the winder for each inspection point.

The driver must: -

Stop the conveyance every time on the pre-arranged number of drum turns.

Acknowledge the signal 6-6 to the banksman. (Shaft covering)

The engineer will continue examining both ropes on the requested number of turns as described previously.

The driver must be aware of the ascending conveyance approaching the bank.

The driver must: -

Acknowledge the signal 6-6 to the banksman.

The banksman will move the shaft covering in to position, for the engineer to examine the rope splice and attachments of the second conveyance.

The driver must: -

Acknowledge the signal 6-6-6 to the banksman.

Acknowledge the signal 7 to the banksman

Receive the signal 4-1 from the banksman.

Raise the ascending conveyance slowly.

Stop on the signal 1 from the banksman.

Reply to the signal 1 from the banksman.

The engineer will now examine the conveyance and its attachments, the rope connections as described for the first conveyance at the beginning of this examination.

The driver must: -

Acknowledge the signal 7-7 to the banksman.

One of the points, which must be examined every month, is the rope crossover on the winding drum.

The engineer and rigger will come to the engine room and ask the driver to do a full speed trip up and down the shaft.

The driver must: -

Obtain the clear signal 2-2 from the banksman.

The engineer will examine the dead layers of each drum, the rope entry at the haws hole and back end connection inside the drum.

The engineer will record the particulars of the rope examination in the Rope Record Book. He will then clear and sign the driver's logbook.

The engineer will carry out this examination at shorter intervals if a rapid deterioration of the rope condition is detected.

On mines where shaft covering for only one compartment is available the procedures as described above must be followed to examine the other winding rope separately.

3. ROPE EXAMINATION AT QUARTERLY INTERVALS (E.M.T.)

Quarterly interval examinations are not required by regulation but are carried out by the mines to ensure that internal defects of the rope, which cannot be detected during the daily and monthly examinations, are picked up. This Electro-Magnetic Test is carried out by a team of specialised technicians, a machine with four small wheels are placed around the rope on the shaft covering and is connected to a machine which records on a graph any defects on the rope. The technician will determine the winder speed.

The driver must: -

Countersign the entry made in the logbook by the rigger. (Pre-arrangements)

The banksman will ring the necessary signals to lower the conveyance so that front end of the winding rope is level at the bank.

The driver must: -

Acknowledge the signal 6-6 to the banksman.

The shaft covering will be placed in position and the machine will be connected to the rope.

The driver will: -

Acknowledge to the signal 6-6-6 from the banksman.
Receive the signal 4-2 from the banksman.
Lower the conveyance slowly ($\pm 1,5$ m/sec. Or as requested).
Prevent shocks and uneven speeds.
Stop the conveyance when signalled 1 by the banksman.
Acknowledge the signal 4-4 to the banksman.
Mark his depth indicator and drum
This mark will indicate that a fault has been detected. The mark must be made to enable the rope to be examined at a later stage by the rigger.

The driver must: -

Receive the signal 4-2 from the banksman.
Lower the conveyance as described before.
Stop the ascending conveyance 1 turn below the bank and await further instructions or signals from the banksman.
The E.M.T. machine will now be removed from the rope and connected to the other rope.
Follow the procedures as described above to examine the second rope, on completion,

The driver must: -

Countersign the logbook entry when it is cleared and signed by the rigger.