Remote Mining – LW Development

November 2018
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Miner & Miner Bolters - Australia Model Range

12ED35 Entry Driver

12CM30 Wide head miner bolter

12CM12 Wide head miner bolter

12CM27 Mid – High Seam R&P Miner
ROS

System Overview

- The ROS unit is located in a safe position (normally out of line of site to the face).
- The Miner is configured to be able to communicate with the ROS station.
- Communication enablers are installed (Normally a fibre optic cable).
- The Remote Mining operation is conducted from the ROS unit. Full two way Faceboss communications as well as cameras to aid the operator.
- Normally the mining area is left to settle for a period of time until it is safe to re-enter and perform Strata Support and Haulage activities.

- Advance rates are quite slow due to the period of time for the mining area to settle.
- Operational at Appin and Narrabri Mines
- Currently being configured for Metropolitan Mine.
- Assisting Tahmoor with a Wi-Fi system.
ROS (Remote Operator Station) “Remote Mining”

The remote mining operation allows operation of the machine from an area that is out of the range of the remote radio transmitter. The remote transmitter is interfaced with the machine via the Remote Operator Station (ROS) located outbye from the machine. The ROS contains interface equipment to communicate with the main machine via fibre optic cable.

The operation of the system is functionally the same as using the remote transmitter in radio mode. The system is connected in parallel with the remote radio receiver into the remote interface. This allows for the selection of operation via the Remote Mining switch in either local operator (radio remote) or control room (ROS). By selecting control room, the switch will disconnect the circuits for the radio receiver and local mode and connect the ROS system.

The remote transmitter from the machine is connected to the ROS via the umbilical cable to be used for remote mining. The machine can now be operated via the remote with the use of a display screen showing footage from cameras which are installed around the machine.

The remote transmitter sends a signal which is converted to an optical signal received at the machine and is converted back to be used by FaceBoss®. If the signal to the machine is interrupted in any way, FaceBoss® de-energises all motors and a data message is displayed on the FaceBoss® screen.

When Remote Mining Mode is selected, the Remote Mining Warning beacon flashes to indicate that remote mining is in operation and the area is not to be accessed by personnel.

The FaceBoss® display in the ROS is loaded with the machine software and mirrors the machine FaceBoss® display. The operator has full access to all customer level screens.
Camera System

Typically two cameras are mounted on the Miner as shown below. One camera faces inbye to show the face and a second camera faces outbye to view the haulage being loaded.
Typically a Fibre Cable connects two way communications from the Miner to the ROS Station. We are working with one Mine to have the communication via a Wi-Fi system.
ROS

CM Main Controller

Miner Main Controller configured to allow connection to the ROS system. Most Mines will have one ROS unit but have multiple Miners capable of connection.