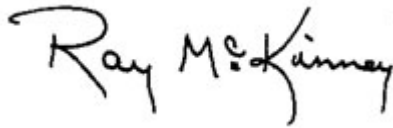


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PROGRAM INFORMATION BULLETIN NO. P05-19



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SUBJECT: Use of Mobile Roof Support (MRS) Units for Retreat Mining

### **Scope**

Coal mine operators, miners and miners' representatives, and Mine Safety and Health Administration (MSHA) enforcement personnel should have this bulletin.

### **Purpose**

The purpose of this bulletin is to inform the mining community of best practices for reducing accidents related to the use of Mobile Roof Supports (MRS) when conducting retreat mining.

### **Background**

On August 3, 2005, two miners were fatally injured when they were struck by a roof fall while in the process of moving the MRS units. Since 1998, there have been 17 roof fall fatalities while conducting pillar mining. Eight of these fatalities have occurred while installing posts or moving MRS units. Four fatalities occurred for each of these work activities. Three of the four MRS fatalities occurred because the MRS units were not moved in the proper manner.

### **Information**

MRS have been used in the mining industry for over 15 years, replacing roadside-radius (turn) and some breaker posts during pillar recovery. MRS are stronger than posts and can be operated remotely. These units provide greater roof support protection and eliminate or greatly reduce the need for miners to travel close to the pillar line to install

posts necessary for conducting retreat mining. If used properly, the MRS units can provide a safer form of roof support compared to installing posts during pillar mining. If not used properly, operating the MRS units and the removal of the units from the active pillaring area can be extremely hazardous.

The following Best Practices have been identified as having the potential for preventing accidents, injuries and fatalities when using MRS units as roof support during pillar mining:

- **Onboard, manually-operated controls should be “locked out” or under a “bolted down” cover plate to restrict their usage to maintenance and troubleshooting purposes only.**

*Because onboard, manual controls (sometimes referred to as manual overrides) are intended for maintenance and troubleshooting only, their use should be restricted to an outby area, between solid coal pillars. To prevent unintended use in an active pillaring area, these controls should be “locked out” or under a “bolted down” cover plate. Information on lock-out devices or bolt down cover plates for the manual controls should be obtained from the MRS manufacturers. Even in an outby area, temporary supports should be installed before pressurizing or de-pressurizing the units with the manual controls. Any material, such as thin pieces of rock, on top of the MRS that poses a fall hazard should either be removed or secured against movement prior to manual operation. Also, any roof damage incurred as a result of pressurizing and depressurizing the MRS unit should be addressed before removal of the temporary supports.*

- **Umbilical remote controls should only be used for tramming the MRS units between solid coal pillars.**

*Umbilical remote control requires the operator to physically “plug-in” or retrieve the pendent control on the MRS unit. This connection should not be made until the MRS has been moved via the radio remote control into a safe location completely out of the active intersection following the last lift. Once away from the active pillaring area, the pendent can be safely plugged in or retrieved and used for tramming the MRS to the next pillaring location. However, the operator should utilize sufficient pendent cable length to maintain a safe operating distance and should never use the umbilically controlled unit to displace breaker timbers.*

- **When tramming the MRS units, all personnel should be clear of pinch points between the units and between the units and the rib.**

*Under no circumstances should anyone, including the MRS operator, be permitted beside or within the turning radius of the MRS units when they are being moved.*

- **When setting and lowering the MRS, the operator should be positioned in a safe location, at least 20 feet away from the units.**

*A greater distance may be required depending on the MRS working height, immediate roof conditions, the amount of accumulated debris atop the units, or the lift being mined. For*

*example, during mining of the last lift the MRS operator should remain out of the active intersection. During the setting and lowering process, all personnel should be positioned outby the MRS operator. This includes personnel assisting the MRS operator by monitoring the pressure gages.*

- **While in the active pillaring area, the MRS units should be operated in pairs, using the radio remote control.**

*When moving the mobile roof supports from pillar lift to pillar lift, each MRS should be advanced sequentially such that one unit will never be offset more than one half the length of its companion unit. The MRS units should be advanced immediately after each lift, and should be kept as close as practical to the continuous mining machine during each lift. Upon completion of mining in a given pillar, the MRS units should be moved sequentially until they are between solid coal pillars. During this process, at least one unit will be pressurized against the roof at all times.*

- **While pillaring, MRS pressure gages or colored area lights should be used to monitor roof loading.**

*Gages or load indicating lights should be observed to first ensure that the MRS units have been properly set against the mine roof. (Mine management should determine a pressure level for setting the MRS units). Gages or lights are to be continually observed to ascertain if pillaring operations need to be stopped in a specific lift. These gages should be large enough to allow remote monitoring. Mining should cease in a lift either at the MRS yield pressure or at some lower level dictated by roof conditions (determined by mine management). Pillaring operations should also cease if neither the gages nor lights are operational.*

- **Install the MRS cables with break-away cable hangers so that the cable can be pulled down remotely.**

*Use of such devices will prevent personnel exposure to hazardous roof adjacent to the MRS units. No hangers should be retrieved from the blocks being pillared.*

- **Precautions should be included in the Roof Control Plan for supporting the roof in the event one of the MRS units becomes inoperative.**

*Depending on mine-specific circumstances, the roof control plan may permit the repositioning of one of four units to maintain a pair in the more critical area adjacent to the gob. For example, if an MRS unit in the straight becomes inoperative, an outby MRS from the crosscut could replace it. Wood supports may provide an acceptable replacement for an MRS unit in a breaker setting but should not be used in conjunction with an MRS unit in a radius turn post application. It is not advisable to simply substitute wood supports for an MRS and continue the same cut plan/lift sequence.*

- **When parking the MRS units for an extended period of time, they should be positioned between solid coal pillars outby the active pillaring area. The units should remain in contact with the roof to prevent dynamic loading in the event of a roof fall.**

*Pressurizing the MRS against the roof in areas where personnel will later be working or traveling may create a hazard by damaging the roof or permanent roof support. Therefore, in this circumstance, the MRS units should be pressurized with minimal force (just against the roof). Also, the radio remote control units should be stored in a safe area away from the machines.*

- **The roof control plan should include a method for the safe retrieval of a disabled or entrapped MRS.**

*Train miners before utilizing the plan.*

### **Authority**

The Federal Mine Safety and Health Act of 1977 and 30 C.F.R. Section 75.207.

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### **Internet Availability**

This information bulletin may be viewed on the World Wide Web by accessing the MSHA Home Page at [www.msha.gov](http://www.msha.gov) and then choosing "Rules and Regulations/Compliance Assistance Information/Program Information Bulletins."

### **Distribution**

MSHA Program Policy Manual Holders  
Underground Coal Mine Operators  
Coal Special Interest Groups