



**MSHA's "Rules to Live By"  
Stakeholder Meeting  
MSHA Headquarters, Arlington, VA  
January 27, 2010**



# **PREVENT FATALITIES – RULES TO LIVE BY**

- MSHA's Fatality Prevention Program
- Reflects MSHA's commitment to eliminate hazards with the most serious consequences
- Targets prevention of conditions that cause or contribute to fatal accidents in mining

# **PREVENT FATALITIES – RULES TO LIVE BY**

- Initial focus on stakeholder outreach, education and support to improve fatality prevention
- Followed by enhanced enforcement

# **PREVENT FATALITIES – RULES TO LIVE BY**

- Builds on the record low of 34 mining deaths in the United States in 2009
- MSHA and the mining community must work together to end fatalities in mining

# **PREVENT FATALITIES – RULES TO LIVE BY**

On July 30, 2007, a 27-year old roofing contractor was fatally injured when he fell approximately 28 feet through the roof of a maintenance shop at an Alabama coal mine. The miner apparently either stepped on a fiberglass skylight, causing it to break, or fell through an opening adjacent to the skylight while removing old roof material.

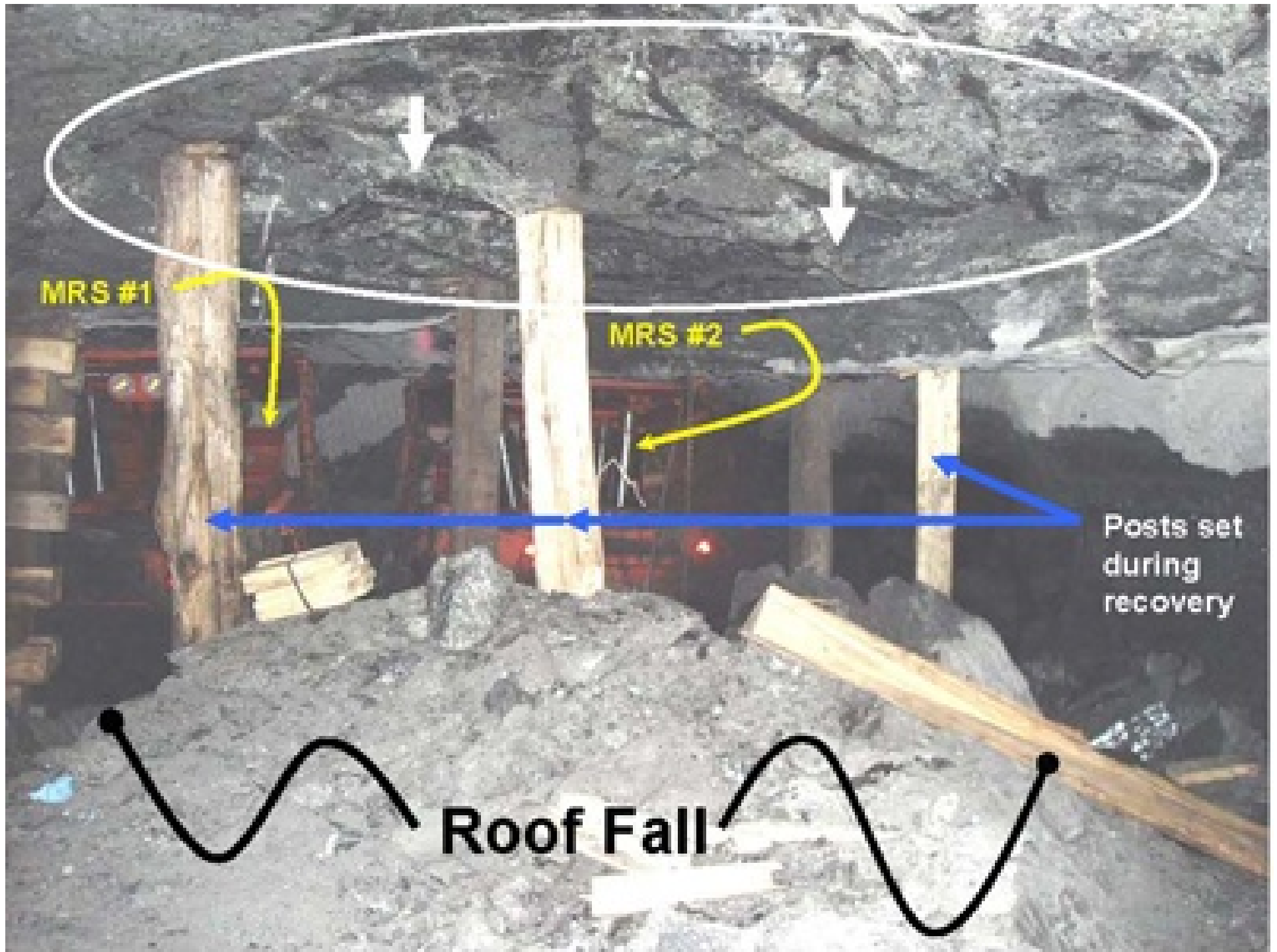
Citations were issued to both the contractor and the operator for violations of 30 CFR, 77.1710(g) – safety belts and lines shall be used where there is a danger of falling.



# **PREVENT FATALITIES – RULES TO LIVE BY**

On January 13, 2007, two miners were fatally injured while repositioning the mobile roof-support (MRS) machines during retreat mining. When one MRS was released from the mine roof, a portion of the roof collapsed pinning both miners who were approximately 15 feet outby the MRS. The portion of the mine roof that fell measured approximately 8 ft. wide by 9 ft. long and 0-24 inches thick. The victims were 48 and 33 years old with 12 and 2.5 years of mining experience, respectively.

A citation was issued to the operator for a violation of priority standard 30 CFR 75.220(a)(1) – failure to follow approved roof control plan. The operator was also cited for a violation of 48.7(a) – insufficient task training.



# **PREVENT FATALITIES – RULES TO LIVE BY**

On October 11, 2008, a 67-year-old cement handler with 3 years of experience was fatally injured at a cement operation in Missouri. During the loading process on a barge, the miner was trying to cover a dust collection hatch with a tarp when he fell through the open hatch and landed on the barge floor 20 feet below.

A citation was issued to the operator for a violation of 30 CFR, 56.15005 – safety belts and lines.



Victim fell through  
this hatch

# **PREVENT FATALITIES – RULES TO LIVE BY**

On April 25, 2007, a 65 year-old truck driver, with 42 years mining experience, was fatally injured at a cement operation. The miner was operating a haul truck that veered off the roadway, climbed a berm, and fell over a highwall onto a bench below. The victim was not wearing a seat belt at the time of the accident and was ejected from the cab of the truck.

Citations were issued to the operator for violations of priority standards 30 CFR 56.9101 - operating speeds and control of equipment, and 30 CFR 56.14131(a) – seat belts shall be provided and worn in haul trucks



# **PREVENT FATALITIES – RULES TO LIVE BY**

MSHA's analysis identified 24 standards – 13 in metal and nonmetal mining and 11 in coal mining – frequently cited in fatal accident investigations in 9 accident categories

- Accident Categories
  - Falls from Elevation
  - Falls of Roof and Rib
  - Operating Mobile Equipment (Surface)
  - Operating Mobile Equipment (Underground)
  - Maintenance
  - Lock and Tag Out
  - Struck by Mobile Equipment (Surface)
  - Struck by Mobile Equipment (Underground)
  - Blocking Against Motion

# **PREVENT FATALITIES – RULES TO LIVE BY**

## Mining Deaths in the 21<sup>st</sup> Century

From CY 2000 – 2008, 589 miners lost their lives

- 300 Coal fatalities
- 289 MNM fatalities

# PREVENT FATALITIES – RULES TO LIVE BY

## Outreach

Two public outreach meetings

- Austin, TX – February 11, 2010
- Charleston, WV - TBD

Dissemination of information on priority standards and conditions to:

- stakeholders, mine operators, state grantees, Holmes Safety Associations

Single source page on MSHA's website with compliance assistance materials

- engineering suggestions
- safety target materials packages
- enforcement summaries
- printable posters
- charts, graphs, other information resources

# **PREVENT FATALITIES – RULES TO LIVE BY**

- Inspector Training
  - Coal and MNM inspectors will be provided refresher training in the priority standards
  - Online training will be conducted from February 15, 2010 to March 14, 2010

# **PREVENT FATALITIES – RULES TO LIVE BY**

- Stakeholder Outreach and Education
  - Begins on January 27, 2010
- Enhanced Enforcement
  - Begins on March 15, 2010

# PREVENT FATALITIES – RULES TO LIVE BY

- Focused attention and enforcement of 24 priority standards in nine accident categories
  - increased scrutiny for violations of these standards
  - inspectors to carefully evaluate gravity and negligence, consistent with seriousness of violation, when citing violations of priority standards
  - violations will be reviewed for special assessment
  - Inspector resources
    - online training, enforcement summaries, tip sheets, automatic pop-up messages regarding the priority standards for the inspector laptop application.

# PREVENT FATALITIES – RULES TO LIVE BY

Violations of 13 frequently cited MNM standards caused or contributed to 126 of the 289 (44%) MNM fatalities

- [56.9101](#) Operating speeds and control of equipment
- [56.12017](#) Work on power circuits
- [56.14101\(a\)\\*](#) Brake performance
- [56.14105](#) Procedures during repairs or maintenance
- [56.14130\(g\)](#) Seat belts shall be worn by equipment operators
- [56.14131\(a\)](#) Seat belts shall be provided and worn in haul trucks
- [56.14205](#) Machinery, equipment, and tools used beyond design
- [56.14207](#) Parking procedures for unattended equipment
- [56.15005](#) Safety belts and lines
- [56.16002\(c\)](#) Bins, hoppers, silos, tanks, and surge piles
- [56.16009](#) Persons shall stay clear of suspended loads
- [56.20011](#) Barricades and warning signs
- [57.3360](#) Ground support use

\*includes all subparts

# **PREVENT FATALITIES – RULES TO LIVE BY MNM Standards & Conditions**

**56.9101** - Operating speeds and control of equipment

**Type of condition(s) leading to fatalities:**

- Equipment operator not maintaining control of the equipment while in motion.
- Operating speeds not consistent with the conditions.

**56.12017** - Work on power circuits

**Type of condition(s) leading to fatalities:**

- Power circuits not de-energized before working on the circuits.
- Switches not locked out or other measures taken to prevent the power circuits from being energized without the knowledge of the individuals working on them.

# **PREVENT FATALITIES – RULES TO LIVE BY MNM Standards & Conditions**

## **56.14101(a) Brake performance**

### **Type of condition(s) leading to fatalities:**

Service brakes not capable of stopping and holding the equipment with its typical load on the maximum grade it travels.

- Parking brakes not capable of holding the equipment with its typical load on the maximum grade it travels.
- A brake system component not maintained in a functional condition

## **56.14105 - Procedures during repairs or maintenance**

### **Type of condition(s) leading to fatalities:**

- Machinery or equipment not blocked against motion during repairs or maintenance.
- Equipment not effectively de-energized.
- Persons not protected against hazardous motion during testing or adjustments.

## **56.14130(g) - Seat belts shall be worn by equipment operators**

### **Type of condition(s) leading to fatalities:**

- Failure to wear seatbelts while operating mobile equipment.

# **PREVENT FATALITIES – RULES TO LIVE BY MNM Standards & Conditions**

**56.14131(a)** - Seat belts shall be provided and worn in haul trucks

**Type of condition(s) leading to fatalities:**

- Seatbelts not worn when operating or riding in a haul truck.

**56.14205** - Machinery, equipment, and tools used beyond design

**Type of condition(s) leading to fatalities:**

- Using machinery, equipment, or tools beyond design capacity intended by manufacturer.

**56.14207** - Parking procedures for unattended **equipment**

**Type of condition(s) leading to fatalities:**

- Mobile equipment left unattended and controls not placed in park position.
- Provided parking brake not set.
- Mobile equipment parked on grade and wheels/ tracks are not chocked or turned into a bank.

# **PREVENT FATALITIES – RULES TO LIVE BY MNM Standards & Conditions**

## **56.15005 - Safety belts and lines**

### **Type of condition(s) leading to fatalities:**

- Persons not wearing fall protection when exposed to a fall hazard

## **56.16002(c) - Bins, hoppers, silos, tanks, and surge piles**

### **Type of condition(s) leading to fatalities:**

- Persons entering bins, tanks, hoppers or surge piles not wearing fall protection where there is a fall hazard.
- A second person not provided to tend the lifeline.
- Persons entering bins and hoppers when flow of materials has not ceased and/or supply and discharge equipment not locked out.
- Safe access in and around working areas not provided.

# **PREVENT FATALITIES – RULES TO LIVE BY MNM Standards & Conditions**

**56.16009** - Persons shall stay clear of suspended loads

**Type of condition(s) leading to fatalities:**

- Persons failing to stay clear of suspended loads.

**56.20011** - Barricades and warning signs

**Type of condition(s) leading to fatalities:**

- Barricades or warning signs not posted at all approaches where health or safety hazards exist that are not immediately obvious.

**57.3360** - Ground support use

**Type of condition(s) leading to fatalities:**

- Necessary ground support not designed, installed, and maintained in areas where persons work or travel.

# PREVENT FATALITIES – RULES TO LIVE BY

Violations of 11 frequently-cited Coal standards caused or contributed to 140 of the 300 (47%) Coal Fatalities

- [75.202](#) \* Roof, face, and ribs shall be supported and no person shall work or travel under unsupported roof
- [75.220\(a\)\(1\)](#) Develop and follow approved roof control plan
- [75.511](#) No electrical work shall be performed on energized low, medium, or high-voltage distribution circuits or equipment ...
- [75.1403-10\(i\)](#) Off-track haulage roadways shall be maintained...
- [75.1725\(a\)](#) Equipment shall be maintained in safe operating condition or, removed from service
- [75.1725\(c\)](#) No repairs until power off and blocked
- [77.404\(c\)](#) No repairs or maintenance shall be performed until the power is off and machinery is blocked
- [77.1607\(g\)](#) All persons shall be clear before starting or moving equipment
- [77.1607\(n\)](#) Mobile equipment shall not be left unattended unless brakes are set, chocked...
- [77.1710\(g\)](#) Safety belts and lines shall be used where there is a danger of falling
- [77.1710\(i\)](#) Seatbelts shall be worn in a vehicle where there is a danger of overturning and where roll protection is provided
- \*includes all subparts

# **PREVENT FATALITIES – RULES TO LIVE BY Coal Standards & Conditions**

**75.202 (includes all subparts)** - Roof, face, and ribs shall be supported and no person shall work or travel under unsupported roof

**Type of condition(s) leading to fatalities:**

- Work or travel under/ by unsupported roof or rib.
- Incompetent roof and ribs not scaled down.
- Additional roof support not provided.

**75.220(a)(1)** - Develop and follow approved roof control plan

**Type of condition(s) leading to fatalities:**

- Failure to install supplemental support or take additional measures when adverse roof conditions are encountered.
- Body positioning prohibited by the plan.
- Unsafe pillar recovery identified.
- Excessive cut depth (deeper than the approved cut depth in plan) identified.
- Excessive roof bolt spacing (use PIL No. 108-V-7 for guidance) identified.
- Visible warning devices not provided.
- Wide entries identified.

# **PREVENT FATALITIES – RULES TO LIVE BY Coal Standards & Conditions**

**75.511** - No electrical work shall be performed on energized low, medium, or high-voltage distribution circuits or equipment ...

**Type of condition(s) leading to fatalities:**

- Electrical work performed by a non-qualified person.
- Failure to lock out and tag disconnecting devices prior to performing electrical work.

**75.1403-10(i)** - Off-track haulage roadways shall be maintained...

**Type of condition(s) leading to fatalities:**

- Haulage roadways not maintained free of bottom irregularities, debris and wet, muddy conditions.

# **PREVENT FATALITIES – RULES TO LIVE BY Coal Standards & Conditions**

**75.1725(a)** - Equipment shall be maintained in safe operating condition or removed from service

**Type of condition(s) leading to fatalities:**

- Mobile and stationary machinery and equipment not maintained in safe operating condition:
  - Remote control tram interlocks are taped up or otherwise disarmed.
  - Operating controls have been altered or stick unintentionally.
  - Safety interlocks on mobile bridge conveyors defective or fouled with debris.
  - Operator compartment doors or shields removed.

**75.1725(c)** - No repairs until power off and blocked

**Type of condition(s) leading to fatalities:**

- Repairs or maintenance performed on machinery without removing power.
- Machinery not blocked against hazardous motion.
- Hydraulic repairs conducted on pressurized hoses and fittings

# **PREVENT FATALITIES – RULES TO LIVE BY Coal Standards & Conditions**

**77.404(c)** - No repairs or maintenance shall be performed until the power is off and machinery is blocked

**Type of condition(s) leading to fatalities:**

- Repairs or maintenance performed with power on.
- Machinery not blocked against motion.

**77.1607(g)** - All persons shall be clear before starting or moving equipment

**Type of condition(s) leading to fatalities:**

- Failure to ensure that all persons clear before starting or moving equipment.

**77.1607(n)** - Mobile equipment shall not be left unattended unless brakes are set, chocked...

**Type of condition(s) leading to fatalities:**

- Brakes not set on unattended mobile equipment.
- Wheels on mobile equipment not blocked or turned into bank/ berm when parked on grade.

# **PREVENT FATALITIES – RULES TO LIVE BY Coal Standards & Conditions**

**77.1710(g)** - Safety belts and lines shall be used where there is a danger of falling

**Type of condition(s) leading to fatalities:**

- Failure to wear fall protection where danger of falling.

**77.1710(i)** - Seatbelts shall be worn in vehicle where there is danger of overturning and where roll protection is provided

**Type of condition(s) leading to fatalities:**

- Failure to wear seatbelts.

