Safety and Health Toolbox Talks

When and where you need them

TALKS

CDC NIOSH

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No further development or upgrades for this software is planned. Any questions concerning this product can be directed to the Office of Mine Safety and Health Research e-mail box at OMSHR@cdc.gov.

Contents

Toolbox Talks Instructions

This set of Toolbox Talks is based on results of a NIOSH research project on hazard perception and risk awareness at surface sand, stone, gravel, and aggregate (SSG&A) operations. NIOSH researchers interviewed workers and recorded what they had to say about hazards and risks at their worksite. The project team also analyzed accident and injury data that had been reported to the Mine Safety and Health Administration (MSHA) to determine which hazards had resulted in nonfatal and fatal injuries during the years 2009–2014. The goal for using these two data sources was to identify hazards that SSG&A mine workers see as critical and then link those hazards to the MSHA nonfatal and fatal data to show that these identified hazards do result in injuries.

How to Use the Toolbox Talks:

The Toolbox Talks materials provide support for brief presentations and discussions about a series of safety and health hazards. For each topic, there is information that can first be read to the audience. Each topic also includes several questions that can be used to guide brief discussions. During the discussions, workers are encouraged to relate the hazard covered to their own work environments.

The Toolbox Talks can be used one at a time for short safety or Toolbox Talks. Or they can be used as modules in a longer training session, such as annual refresher training. No training expertise is needed by the presenter to run sessions with the guidance of this material.

Each Toolbox Talk contains these sections:

What we heard about hazard or risk. The first section describes something a worker said about the hazards or risks at their job. During interviews, researchers wrote down what workers identified as critical hazards and risks. The thoughts and stories presented in the talks were taken from those notes.

Is it really a risk? The hazard or risk is explored by analyzing data from the MSHA accident and injury database. Fatal and nonfatal data are presented in order to show that mine workers' thoughts and experiences are consistent with the realities of accidents, injuries, and fatalities.

The statistics are taken from: MSHA [2015]. Accident, illness and injury and employment self-extracting files (part 50 data), 20092014. Denver, CO: U.S. Department of Labor, Mine Safety and Health Administration, Office of Injury and Employment Information. http://www.msha.gov/STATS/PART50/p50y2k/p50y2k.HTM. Data included are from the

following: years 2009 through 2014, Canvass 5 & 6 (Stone, sand and gravel) which includes contractors, SIC 14460 (nonmetal canvass), sand, industrial, ground silica, quartz, and Subunits 3 (surface), 6 (dredge), & 30 (mills). Date accessed: September 2015.

It really happens. In this section a specific fatality, injury, or near miss is presented as an example to highlight an actual event that took place at a mine site. In order to provide the most appropriate example, NIOSH researchers discussed accidents and near misses with mine workers during the interviews and read MSHA reports of fatalities that occurred at SSG&A mines from 2009 through 2014. On some pages there is a "Source" button that provides a link to more information. An Internet connection is needed to access that material.

Think about it. Each talk ends with questions that help those participating tie the hazard or risk information to their worksite. The person conducting the talk can use these questions to start a discussion that will make the information relevant to participating employees.

Learn more. Links to additional resources are given for each Toolbox Talk. The links are provided to direct safety professionals and workers to publicly available information that can be used to learn more about the topic or modified to create additional training tailored to the specific worksite. An Internet connection is needed to access the materials through these links.

Slips and Falls

What we heard about Slips and Falls

A maintenance worker with 6 months of experience listed slips, trips, and falls as a critical hazard.

Although he is new to mining, he knows that trip hazards can be unexpected and that if he sees something that could be tripped over, then he should move it.

Clearing away tripping hazards is important for you and also for the next person walking in that area.

Is it really a risk?

In 2014, 536 workers at SSG&A mines were hurt when they slipped or fell at work. Five of them died.

If you look back at the years 2009–2014, you will find that 3,243 workers were hurt by slips, trips, and falls and 11 of those workers were fatally injured at SSG&A operations.

Were you one of the injured workers? If not, could it have been you?

It really happens.

A mine worker with 3 years of experience was carrying a porta power jack. He tripped on torch hoses and fell. When he fell, the jack fell and smashed his finger.

Tripping over hoses resulted in four lost days of work.

Think about it.

- ✓ Where is someone most likely to slip, trip, or fall at this operation?
- ✓ Has someone been hurt here by slipping, tripping, or falling?
- ✓ How can you protect yourself from slip, trip, and fall injuries?

Learn more.

NIOSH has compiled a list of resources related to fall injury prevention in the workplace. This list of resources includes links to research articles that are focused on a better understanding of why slips, trips, and falls happen in the workplace and recommendations for how to prevent slip, trips, and falls in the workplace. This list also includes a link to the NIOSH Ladder Safety App, which is useful for addressing issues related to falls from height.

Ground Control

What we heard about Ground Control

A pit loader operator, who had 2 years of mine experience, told us that he thinks about ground control hazards at work. He hadn't seen anyone hurt but he said, "You can look at the walls, though, and see where the rock is shifting."

At his operation, the rule is to stay 12 to 15 feet away from the highwall when working. According to their SOP,[1] if the area is inactive, then they are supposed to install a berm. But this safety precaution cannot be taken while they are actively loading.

Is it really a risk?

During 2009–2014, 35 mine workers were injured in accidents where there was a fall of side or highwall.

During this same time period, 6 miners were killed because they either got too close to the highwall while working in the pit or were unaware of changes to stockpiles because of how material was removed.

[1] SOP = Safe Operating Procedure

It really happens.

Two days before Thanksgiving in 2014[2], a truck driver backed his truck up to the edge of an overburden dumpsite and raised the bed to dump the load.

The ground under his truck failed. The truck overturned and landed upside down 30 feet below the original dumping point.

This driver, who had 10 ½ years of experience, died of his injuries on the way to the hospital.

Think about it.

- ✓ What type of ground control issues do you have to be aware of where you work?
- ✓ What are signs of ground control problems?
- ✓ What do you look or listen for?
- ✓ What does your operation do to control ground stability?
- ✓ How can you protect yourself from unstable ground?

Learn more.

MSHA created a presentation discussing ground control at surface mines. The presentation is focused on highwall hazards and provides recommendations on how to remediate them.

[2] Source: http://arlweb.msha.gov/fatals/metal/2014/fatalgrams/fab-m22.asp

Lock-Out Tag-Out (LOTO)

What we heard about LOTO

When talking about workers protecting themselves, a pit loader operator with 2 years of mining experience said, "You just have to make sure to follow rules like putting locks on for LOTO. Most people have a lot of experience. They know not to do something like restart equipment or machines during maintenance or cleaning."

Is it really a risk?

In just 6 years (between 2009 through 2014), 13 workers at SSG&A operations died because equipment or machinery was not locked out and tagged out when they should have been.

Four of the workers were killed because equipment, such as a belt, was energized by a co-worker who didn't realize maintenance was being performed on it at the time.

It really happens.

A worker with more than 10 years of experience talked about a time when he chose to not lock out, saying “One time I went up on that chute and was shoveling material from the chute without having locked it out. I knew I should have locked it, but I also knew there was no one else in that area of the pit. Nothing happened, but looking back, it was a really bad decision. Yes, there was no one else in the area when I

started the job, but someone could have driven over and turned that belt on while I was up there. I was standing on the belt shoveling material. If someone had turned the belt on, it would have taken me right up the chute and dropped me out of the top and I would have fallen and probably died."

Think about it.

- ✓ What is the equipment maintenance lockout/tagout policy at your mine site?
- ✓ Are there times when following your policy makes it difficult to do your job?
- ✓ Is there a way the policy could be changed to make the job easier, but also keep everyone safe?

Learn more.

NIOSH researchers have written a document titled "Using Lockout and Tagout Procedures to Prevent Injury and Death during Machine Maintenance." The purpose of this document is to provide employers, workers, and manufacturers with strategies for effectively incorporating LOTO into work activities and equipment.

In December 2010, a worker performing maintenance on a belt line was killed when the belt, which had not been locked and tagged out, was restarted while the victim was standing on the belt conveyor.

Struck-by Injuries

What we heard about Struck-by Injuries

A primary crusher operator told us that he tries not to dump when people are going from or coming to the shack because he doesn't want any rocks flying out. He makes sure that nobody leaves the shack while trucks are dumping.

This is a worry for him because he has a lot more to look out for and the area can be very noisy. He said he would not be able to see someone walking up to the primary shack.

Is it really a risk?

From 2009 through 2014, 5,515 workers at SSG&A mines were hurt when they were hit by something they didn't expect to move. Some of these injuries were minor and only required first aid, but 2,778 were serious enough to cause missed days of work and 21 miners were fatally injured.

It really happens.

Here are a few examples from MSHA injury reports of ways a worker was injured when being struck by flying material.

- An employee was outside of his truck, loading material from a bin. It was windy outside and material falling onto the conveyor belt blew into his eyes, even though he was wearing safety glasses.

- Two employees were struck by flying material when the battery exploded while they were jump starting an excavator.
- An employee was removing the cap to a fuel tank. There was a clogged vent that caused pressure to build up in the fuel tank. The cap came loose and struck the employee in the face.

It is important to always be aware of the objects and materials in your work environment.

Think about it.

- ✓ Have you ever been hit by anything at work? If yes, what?
- ✓ What kind of falling or flying objects should you look out for at your worksite?
  Examples: items from shelves in the shop, moving vehicles, and rocks falling from a highwall
- ✓ How can you make it less likely that those objects will hit someone?

Learn more.

The Occupational Safety and Health Administration (OSHA) produced a training guide focused on increasing awareness of possible struck-by accidents. This guide includes an explanation of struck-by accidents, exercises that can be used to increase workers' awareness of them, and an evaluation tool to test the reader's knowledge of how they occur.

Customer Traffic

What we heard about Customer Traffic

A haul truck driver with less than a year of experience is concerned about hazards created by customer truck drivers. When asked about risks on his job, he said, "Customer trucks are ranked #1 because I spend a lot of time at the loading bins where the customer trucks are. The rule here is yield for equipment. 95% of the time they don't really yield."

"I guess it just boils back down to the fact that you don't really know what they are thinking and what they are going to do."

A ground man with over 10 years of mining experience agreed and said that he needs to be very watchful of customer truck operators; he said, "They do stupid things, and they don't read the signs."

There are two separate hazards when it comes to customer truck drivers: (1) their driving on site, and (2) getting out of their vehicles.

Is it really a risk?

Customer truck operators do not have the same level of site-specific knowledge as the workers who are on site every shift.

They likely do not have as much training about the need to be aware of the hazards associated with larger truck traffic and the risks of not abiding by the mine site's speed limit, not using proper PPE, and not following the mine site's traffic pattern.

It really happens.

While we were talking with a ground man, he had the opportunity to show us his concern first hand.

Right after telling us about the risk that customer drivers create for mine employees and for themselves, he stopped our conversation so he could get out of his truck and talk to a customer truck driver. This driver had gotten out of his truck and was on top of the load on the back of the truck trying to redistribute the material by hand.

In addition to being out of his vehicle when he wasn't supposed to be, he was now on top of the truck and he was not wearing any PPE.

Think about it.

- ✓ Where do you see customer trucks on or near your workplace?
- ✓ What would you do if you saw a customer truck operator doing something that wasn't safe?
- ✓ Are there changes that could be made to customer traffic at your operation that could increase your safety?
  Examples: change traffic patterns, put up better signs, and designate customer parking away from loading areas

Learn more.

The Michigan Mine Safety & Health Training Program created guidelines that include information from Title 30 Code of Federal Regulations (56/57.9100 (a and b)) about signage requirements as well as what mine operators and equipment operators need to know about traffic control at a mine site.

Risks to Contractors

What we heard about Risks to Contractors

A loader operator who had over 25 years of mining experience said the biggest safety concern in his job is watching out for people around his machine.

He said, "Don't run into anyone, be careful backing up, make sure no one is behind you or passing."

He highlighted his worry about contractors who drive trucks into the loading area, saying "At the scale, it is hazardous loading little trucks when there are big trucks around. Contractor drivers are given instruction when they come on site. They are told they must stay in their vehicles, but sometimes they get out."

Is it really a risk?

Of the 1,289 injuries to contractors at SSG&A mine sites for the years 2009 through 2014, 16 were fatal.

Seven of these fatalities happened while contractors were working in or around mobile equipment such as haul trucks, tanker trucks, and dozers.

From what we heard, it's always important to be aware of: (1) your surroundings and (2) others working near you.

It really happens.

After checking in at the mine guard shack at a cement operation, a contractor, who had 30 years of experience, drove his truck to a materials storage building to deliver his load of fly ash.[3]

He got out of the truck to untarp the trailer. At the same time, a front-end loader operator was backing down a ramp from a nearby hopper he had been filling.

The front-end loader operator hit the truck driver and pinned him against the truck. This 51-year-old driver died of his injuries.

Think about it.

- ✓ Who is at risk of being hurt around equipment at your site?
- ✓ Are contractors at more or less risk than other workers who operate or work near equipment? Why?
- ✓ What other risks do contractors face?

Learn more.

MSHA issued a Fatality Alert to raise awareness of the risks contract workers face at mine sites. This fatality alert includes best practices that can be used to increase the health and safety of both contractor and mine employees.

[3] Source: http://arlweb.msha.gov/fatals/2014/FAB14m16.asp

Nonroutine Tasks

What we heard about Nonroutine Tasks

A ground man with over 10 years of experience told us, "If it is a big job, like a plant tear down, there is a lot of planning ahead of time, and we identify all the potential hazards. We spend a lot of time on safety when it is a big job that we don't do very often. But it is still risky because we aren't all that experienced at those jobs, and hazards can just pop up."

Is it really a risk?

In 6 years (between 2009 and 2014), 17 workers at SSG&A operations died as a result of being injured while doing what MSHA calls nonroutine tasks.

A nonroutine task is one that isn't done often enough for the people doing the job to be completely familiar with it or one that must be done away from the area where they normally work.

It really happens.

In 2009, workers at a surface limestone mine were assigned to remove an old aggregates plant. They were using a crane to remove a crusher from its base and had used double chain slings with grab hooks and wire rope bridles to secure it.[4]

The shift supervisor was working near the base of the crusher. A laborer was passing information from him to the crane operator.

When the crusher was lifted about 6 inches from its base, the boom of the crane twisted and fell. It hit and killed the 61-year-old laborer.

Think about it.

- ✓ What are nonroutine tasks that have to be done at your operation?
- ✓ Is preparing to work safely during a nonroutine task different than preparing for a routine task?
- ✓ How do you prepare to do a task you do not perform very often?

Learn more.

The University of Chicago's Environmental Health and Safety Program gathered information related to nonroutine jobs and tasks, which are jobs and tasks that aren't performed often enough to be completely familiar to the worker.

This document includes recommendations for how to prepare for and avoid hazards associated with a nonroutine task.

[4] Source: http://arlweb.msha.gov/FATALS/2009/FAB09m05.asp

Working at Heights

What we heard about Working at Heights

A haul truck driver with less than a year of experience said this about the risk of falling from heights, "If you think you are too high, you can always put a harness on or just be extra careful."

Do you agree?

Is it really a risk?

From 2009 through 2014, there were 2,304 miners injured and 13 workers were killed when they fell from some height at a SSG&A operation.

In every case, the fatality could have been prevented by the correct use of fall protection.

It really happens.

A ground man with over 10 years of mining experience shared a safety slip up.

He said, "On a daily basis I am safe, but there are some things I get complacent with. For example, I sometimes shovel the chutes without gloves on and sometimes I step or stand on the hand rails, and I don't always wear my hearing protection. Working at heights, especially lower heights, but still above the MSHA rule, is a big issue for me.

Sometimes I can stand on a guard to reach something instead of going and getting a man lift. This means that the job takes 5 minutes instead of 15 minutes."

Think about it.

- ✓ What tasks do you do as a normal part of your job that require using fall protection?
- ✓ At this operation, what situations are most likely to lead to someone falling from a height?
- ✓ What changes could be made to better protect workers from the risk of falling?

Learn more.

MSHA issued a fatality alert that raises awareness of the dangers of working at heights. A maintenance mechanic was working at a 16-foot height at a crushed stone operation and fell through a missing railing on an elevated walkway. He was not wearing fall protection.

Taking Shortcuts

What we heard about Taking Shortcuts

A mobile equipment operator with over 26 years of experience explained one reason why people get hurt at work, "When you see the people get hurt, it's because they get in a routine of doing the same things all the time. They don't stop and think. They think that little shortcut is going to help them and it don't."

Is it really a risk?

Shortcuts may save you time now, but they can cost you a lot more than a few minutes of your time later.

During the six years from 2009 through 2014, 70 miners died at stone, sand, gravel and aggregate mine and quarry sites.

Many of them took a shortcut. They didn't take the time to de-energize, lockout and tagout the equipment they were working near or they didn't go and get the necessary PPE for the job. They didn't chock their wheels or use the appropriate block for the task. Often they didn't follow the safe operating procedure (SOP) to make sure the job was done correctly.

It really happens.

A mobile equipment operator told us about maintenance work that was done on a pump the previous day. He told us, “The right way means no shortcuts. I guess just sticking it together for the time being because that could, you know… We (just saw) that yesterday. There was a pump that broke loose and I would say that was probably from not doing it the right way the first time, just slapping it together to keep going, and nobody ever went back to check it. ... If you don’t do it the right way, you would have even more lost time later on.”

Think about it.

- ✓ What shortcuts have become bad habits at this worksite?
- ✓ Are there changes that can be made to make jobs easier without dangerous shortcuts?
- ✓ What can you do to discourage your coworkers from taking shortcuts that put them and you at risk?

Learn more.

Workers at your site may be tempted to take shortcuts to get a job done faster. The following link provides examples of situations where a worker took a shortcut. These examples can be used to start a discussion about the possible consequences of taking a shortcut.

You can also the discuss the event where a 54 year old truck driver working at a limestone mine climbed a stack of loaded pallets to get to planks that were stored near the rafters. He fell 8 feet to the ground below and was killed. Instead of going to get a ladder and fall protection to ensure his safety, the miner took a short cut.

Seat Belts

What we heard about Seat Belts

You don't forget the time someone died at your worksite.

A man who typically works in the shop but also occasionally works in the quarry, talked about a fatality that had happened where he worked that resulted from a coworker not wearing his seatbelt.

"A low or unstable berm could have been the cause of the one fatality on site, which happened many years ago. What actually killed him was not being belted in."

Is it really a risk?

Six SSG&A mine workers were fatally injured, between 2009 and 2014, because they were not wearing their seatbelts while operating powered haulage equipment.

It really happens.

In September of 2013 at a crushed stone operation, a haul trucker driver was taking a load of broken rock to the primary crusher.[5]

[5]Source: http://arlweb.msha.gov/FATALS/2013/FAB13m11.asp

He made a sharp left turn and then crossed the haul road. He then drove through the berm on the edge of the roadway. As the truck went over the edge of the road, he was ejected and killed.

This driver, who had over 25 years of mining experience, was not wearing his seatbelt.

Think about it.

- ✓ Do you always remember to buckle up before starting your equipment?
- ✓ Are all the seatbelts on site in good operational condition?
- ✓ What happens if someone doesn't wear a seatbelt on site?
- ✓ Do all of your friends and family members always wear seatbelts?
    - If not, why not? What can you do to make them safer when in a moving vehicle?

Learn more.

Workers not wearing seatbelts while operating haul trucks is a critical issue. The following link discusses recent fatalities that may have been avoided if the operator had been wearing a seatbelt and provides talking points that can be used to probe workers about why they might not be wearing seatbelts.

Housekeeping

What we heard about Housekeeping

A safety trainer with over 26 years of mining experience said, "The greatest threat at a mine site is from housekeeping. It poses a greater risk because it is never done. There isn't a meticulous wife who wouldn't say something else can be done."

Is it really a risk?

Poor housekeeping creates hazards at a mine site. Even small items out of place should be taken care of as soon as possible.

Be on the lookout for a buildup of material on walkways, stairways, or the beltline. Excess material on walkways and stairways can cause trips and falls. It can also fall on you as you walk under catwalks.

Back or shoulder injuries can come from shoveling large amounts of spillage and hand injuries from not wearing the right gloves when doing cleanup.

It really happens.

Here are a couple of examples from MSHA reports of injuries that occurred when housekeeping was neglected at a worksite.

- As a worker was unloading panels from a truck, he stepped on rocks that had accumulated in the area. He twisted his ankle and knee and then fell to the ground.

- While shoveling mud and stones from a walkway that was neglected in routine cleanup, a worker heard a pop and started developing pain in his left shoulder.
- A worker was shoveling clinker out of a walkway. He hurt his back when he lifted the full shovel and twisted his body to empty it into a chute 4 feet from the floor.

In each case, earlier, routine cleanup may have prevented the injuries. In the first case, there wouldn't have been a pile of rocks to step on and in the other two examples, smaller cleanups would have been easier on shoulders and backs.

Think about it.

- ✓ How good is the routine housekeeping at your worksite?
- ✓ Are there any situations where poor housekeeping could be increasing the risk of you or your coworkers getting hurt?
- ✓ Who is responsible for taking care of housekeeping issues where you work?

Learn more.

MSHA created a presentation focused on manual handling of materials. One topic covered in this presentation is the benefit of good housekeeping at a mine site.

Powered Haulage

What we heard about Powered Haulage

A safety trainer with over 27 years of mining experience said that one of his main concerns at a mine site is powered haulage.

"It is a major safety risk and can cause other workplace problems. Trucks, loaders, and haulers do damage to equipment and property. People run over things or back over things."

Is it really a risk?

Between 2009 and 2014, 982 SSG&A miners were injured in incidents involving powered haulage—716 of those injuries resulted in days lost from work, and 21 of the injuries were fatal.

To make drivers more aware of their surroundings, one safety trainer put a traffic cone in the bed of each pickup truck. Operators have to get out of the truck and walk around to get the cone out and put it on the ground when they park. When the operator is ready to leave, they have to pick up the cone and put it back in the truck before they start again. At first there was some grumbling about this new policy, but they have not had a driver back over anything since implementing the program.

It really happens.

On May 28, 2015, a water truck operator died when another water truck was driven over the portable toilet he was using.[6]

Think about it.

- ✓ Have you ever run over anything while operating a haul truck or front-end loader?
- ✓ Is it difficult for drivers of trucks, loaders, and haulers at your mine to see the areas around their vehicles?
- ✓ What could help drivers make sure they are aware of everything around their vehicles?

Learn more.

The National Mine Health and Safety Academy created training called "Surface Powered Haulage Safety." The training is focused on surface haulage accident prevention and is appropriate for equipment operators, supervisors, and safety personnel working at surface mines.

[6] Source: http://arlweb.msha.gov/fatals/metal/2015/fatalgrams/fab-m07.asp

Stopping Work

What we heard about Stopping Work

A ground man with over 10 years of mining experience had this to say when asked about different types of mine site hazards, "Slips, trips, and falls are more common, but aren't as dangerous. Electrical and guarding issues are less common, but more dangerous. Both types of hazards need to be dealt with when they are identified, but the electrical or guarding hazard would require an immediate shutdown, where the spilled material could be taped off and dealt with later."

Is it really a risk?

Sometimes a workplace hazard needs immediate action. Continuing to work is too big a risk when safety equipment—such as guards, emergency stops, and warning systems—is missing or inoperative.

From 2009–2014, 14 SSG&A workers were killed because they worked where a guard or berm was missing or a warning system failed to signal a blast or the re-energizing of a conveyor.

It really happens.

In 2011, a 24-year-old equipment operator was killed at a sand and gravel operation when he became entangled in the head pulley components of the crushing plant's feed belt conveyor. At the time of his death, he had only 3 months of mining experience. This happened because work continued when there were missing guards on the belt conveyor.[7]

Think about it.

- ✓ Are production activities ever stopped at your worksite because of a safety risk?
- ✓ What hazards are dangerous enough to stop production at your site?
- ✓ What is the policy for stopping work because of a safety concern? Who can call for the shutdown?

Learn more.

The article "Empower all Firefighters to Stop Unsafe Practices" discusses why it is critical for workers to be able to voice concerns about health and safety in the workplace. The article provides insight and recommendations on how to create a safety-conscious workforce that will speak up about safety.

[7] Source: http://arlweb.msha.gov/fatals/2011/FAB11m07.asp

Additional Resources

The following resources are provided to assist safety professionals and miners as they seek additional sources of training materials and information on each topic. Brief descriptions of the materials are provided below. Links are also given at the bottom of the talk covering the related subject.

The links are to publically available materials. Inclusion in this list does not imply that NIOSH endorses the product or the organization that created it.

Slips and Falls

NIOSH has compiled a list of resources related to fall injuries prevention in the workplace. This list of resources includes links to the NIOSH Ladder Safety App, research articles focused on better understanding why slips, trips, and falls happen in the work place, and recommendations for how to prevent slip, trips, and falls in the work place.

To learn more about preventing fall injuries, click on the following link:
http://www.cdc.gov/niosh/topics/falls/pubs.html

Ground Control

MSHA created a presentation discussing ground control at surface mines. The presentation is focused on highwall hazards and provides recommendations on how to remediate them.

For more information about ground control issues at surface mines see the following:
http://www.msha.gov/DISTRICT/DIST_02/GC_Surface_Mines.pdf

Lock-Out Tag-Out (LOTO)

NIOSH researchers have written a document about 'Using Lockout and Tagout Procedures to Prevent Injury and Death during Machine Maintenance.' The purpose of this document is to provide employers, workers, and manufacturers strategies for how to effectively incorporate LOTO into work activities and equipment.

To learn more, read the following:
http://www.cdc.gov/niosh/docs/wp-solutions/2011-156/pdfs/2011-156.pdf

In December 2010, a miner performing maintenance on a belt line was killed when the belt that had not been locked and tagged out was restarted.

See the MSHA Fatalgram for additional information:
http://www.msha.gov/fatals/2010/FAB10m22.asp

Struck-by Injuries

OSHA produced a training guide focused on increasing awareness of possible struck by accidents. The guide includes an explanation of struck by accidents, exercises that can be used to increase workers' awareness of struck by accidents, and also an evaluation tool to test their knowledge.

Read the following for additional information:
https://www.osha.gov/dte/grant_materials/fy07/sh-16586-07/2_struckby_hazards_trainer_guide.pdf

Customer Traffic

The Michigan Mine Safety & Health Training Program created 'Guidelines for Traffic Control at Mine Sites.' These guidelines include information from the CFR about signage requirements as well as what mine operators and equipment operators need to know about traffic control at a mine site.

To learn more click on the following link:
http://www.mine-safety.mtu.edu/haulroad/haulroad.htm

Risks to Contractors

MSHA issued a fatality alert to raise awareness of the risks contract miners face at mine sites. The fatality alert includes best practices that can be used to increase the health and safety of both contract and non-contract mine workers.

Learn more about contractor safety:
http://www.msha.gov/Alerts/contractor-fatality-alert.pdf

Nonroutine Tasks

The University of Chicago's Environmental Health and Safety Program gathered information related to nonroutine jobs and tasks. This document includes recommendations for how to prepare for a nonroutine task.

For more information, read the following document:
http://safety.uchicago.edu/files/Non-Routine%20Work%20May%202012.pdf

Working at Heights

A maintenance mechanic was working at height. He wasn't wearing fall protection and fell through a missing railing on an elevated walkway.

See the MSHA Fatalgram for more information:
http://www.msha.gov/fatals/2012/FAB12m03.asp

Taking Shortcuts

Miners at your site may be tempted to take short cuts to get a job done faster. The following document provides examples of situations where a worker took a short cut. These examples can be used to start a discussion about the possible consequences of taking a short cut.

Learn more about preparing for taking shortcuts:
http://www.genins.com/img/~www.genins.com/commercial%20lines%20articles/no%20such%20thing%20as%20a%20safe%20shortcut.pdf

Seat Belts

Workers not wearing seatbelts while operating haul trucks is a critical issue. The following link discusses recent fatalities that may have been avoided if the operator had been wearing a seatbelt and provides talking points that can be used to probe workers about why they might not be wearing seatbelts.

For additional information, read the article "Worker fatality: Why wasn't he wearing his seatbelt?":
http://scienceblogs.com/thepumphandle/2014/02/03/worker-fatality-why-wasnt-he-wearing-his-seatbelt/

Housekeeping

MSHA created a presentation focused on manual handling of materials. One topic covered in this presentation is the benefit of good housekeeping at a mine site.

For additional ways addressing housekeeping can improve safety:
http://www.msha.gov/InteractiveTraining/MaterialHandlingSafety/man02/11man02.htm

Powered Haulage

The National Mine Health and Safety Academy created training for 'Surface Powered Haulage Safety.' The training is focused on surface haulage accident prevention and is appropriate for equipment operators, supervisors, and safety personnel working at surface mines.

Learn more about powered haulage risks:
http://www.msha.gov/TRAINING/surfhaul/index.htm

Stopping Work

The article entitled 'Empower all Firefighters to Stop Unsafe Practices' discusses why it is critical for workers to be able to voice concerns about their health and safety. The articles provides insight and recommendations for how to create a safety-conscious work force that will speak up about safety.

Learn more about work stoppage:
http://www.firehouse.com/article/10471737/empower-all-firefighters-to-stop-unsafe-practices