Agenda

2:00 – Welcome and Introduction
2:05 – Opening Remarks
2:10 – Review of 2020 Fatalities
2:20 – Slip/Fall Truck Injuries & Fatalities
2:35 – Enforcement
2:40 – EP&D Training Material
2:50 – Mine Rescue Training/Contests
2:55 – COVID-19 DOL/MSHA Update
3:00 – Questions
Closing Remarks
Opening Remarks

David G. Zatezalo
Assistant Secretary for Mine Safety & Health
Review of Fatalities
Fatal Accident Statistics
16 Fatal Accidents

Accident Classifications:
Fall of Person - 4 (25%)
Machinery - 4
Powered Haulage - 2
Handling of Material - 2

State:
Arizona – 2   Georgia - 2
California - 2
1 fatality in:
CA, WA, WV, IA, OH, LA, TX, KS, MO
and MI

Commodity:
Sand and/or Gravel - 9 (56%)
Limestone – 4

Type of Mine:
Surface - 13 (81%)
Underground - 2
Surface of Underground - 1

Mine Experience:
1 Year or less - 5
2 Years or less – 8 (50%)

Activity Experience:
1 Year or less - 3
2 Years or less – 8 (50%)

20 employees or less – 14 (88%)
On May 21, 2020, a miner was injured when an unsecured overhead steel pipe slid out of place and struck him. Miners used the steel pipe to support a lever hoist and electric motor that was being removed. The miner died two days later from his injuries.
Mine Fatality
#11- 2020

On July 9, 2020, a mine superintendent was electrocuted while attempting to reverse the polarity of the 4,160 VAC circuit by switching the leads inside an energized 4,160 VAC enclosure which contained a vacuum circuit breaker and disconnect.
Mine Fatality
#12 - 2020

On July 24, 2020, two miners were loading explosives from inside an aerial lift's basket, when the basket jolted upward into the mine roof causing the death of one of the miners.
Mine Fatality
#13 - 2020

On July 29, 2020, a miner was injured when his arm became entangled in a stacker belt conveyor. The victim was airlifted to a trauma center where he passed away a week later.
Mine Fatality
#14 - 2020

On August 18, 2020, a miner was killed while attempting to clear a material blockage. The victim entered the cone crusher to begin work when material shifted and engulfed him. The victim was extracted from the crusher and taken to a hospital where he died the next day.
Mine Fatality
#15 - 2020

On August 26, 2020, two miners were preparing a mobile track mounted jaw crusher for shipping off site. The victim was removing wedges that secured the right hopper extension. When the wedge was removed the extension fell, crushing the victim.
On September 1, 2020, a miner died when he fell attempting to close a hatch on top of a customer tractor-trailer. The miner was wearing a safety harness but was not tied off.
Review of Slip & Fall Injuries & Fatalities
Fall from Equipment Fatalities

• From 2015 to present, there have been seven fatalities involving miners falling from equipment.

• Three were attempting to mount/dismount equipment.

• One victim was not tied off in an aerial lift while doing maintenance.

• Three of these fatalities have occurred this year.
  – Two involved closing the hatch of a bulk tanker truck.
  – One involved falling from the top of a trailer while installing a tarp.

• Root causes include not providing safe access, not wearing PPE, inadequate policies and oversight, and inadequate training.
Fall from Equipment Fatalities by Age 2015 to Present

<table>
<thead>
<tr>
<th>Age</th>
<th>Fatalities</th>
</tr>
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<tbody>
<tr>
<td>20 - 29</td>
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<tr>
<td>30 - 39</td>
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<tr>
<td>40 - 49</td>
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<tr>
<td>50 - 59</td>
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<tr>
<td>60 - 69</td>
<td>2</td>
</tr>
<tr>
<td>70 - 79</td>
<td>1</td>
</tr>
</tbody>
</table>
Fall from Equipment Fatalities by Mine Experience 2015 to Present

- < 1 Year: 4, 57%
- 1 - 5 Years: 1, 14%
- > 5 Years: 2, 29%
Fall from Equipment Fatalities by Total Experience 2015 to Present

- > 5 Years, 5, 72%
- 1 - 5 Years, 1, 14%
- < 1 Year, 1, 14%
Fall from Equipment NFDL Injuries

• From 2015 to present, there have been 865 NFDL injuries.
  
  – Getting on or off equipment accounts for over two thirds (590) of fall from equipment NFDL injuries.
  
  – Truck tarping and opening hatches to bulk tanker trucks accounted for 40 NFDL injuries.

• Most of the injured miners were mine employees.
Fall from Equipment NFDL Injuries
Mine Experience
2015 to Present

- < 1 Year: 31%
- 1-5 Years: 30%
- 5-10 Years: 15%
- > 10 Years: 24%
Fall from Equipment NFDL Injuries
Total Experience 2015 to Present

- > 10 Years: 42%
- 1-5 Years: 22%
- 5-10 Years: 18%
- < 1 Year: 18%
Aging Workforce

• According to U.S. Bureau of Labor Statistics:
  – One in every five American worker is over 65.
  – Employment of workers aged 65 or older has grown by 117% in a span of 20 years.
  – Employment of individuals 75 years or older has also increased by 117%.

• Grip strength and flexibility generally decrease with age. Older miners are at risk when using access systems that rely on grip strength and flexibility.
Innovative Product Solutions

AUTOMATED LID COVERS FOR TANKERS AND TRAILERS
Innovative Product Solutions

PLATFORMS FOR SAFE ACCESS ATOP TANKERS AND TRAILERS
Innovative Product Solutions

FALL PROTECTION ANCHOR POINTS
Innovative Product Solutions
AUTOMATIC TARP SYSTEMS
Summary

- 7 fatalities involving miners falling from equipment
  - This year, two were falls while accessing the hatch of a bulk tanker truck and one truck tarping fatality.
- The average age of the victim is 56 1/2 years old.
- Four victims had less than 1 year of experience at the mine.
- 865 NFDL injuries involved miners falling from equipment. Forty of these involved truck tarping and opening hatches to bulk tanker trucks.
- 68% of fall from equipment NFDL injuries happened while miners were attempting to mount or dismount the machine.
- Root causes include not providing safe access, not wearing PPE, inadequate policies and oversight, and inadequate training.
Best Practices

1. Establish a fall protection program and provide training to miners.
2. Reduce hazards by providing safe access and fall protection that includes a harness and lanyard.
3. Provide, use, and maintain safe truck tarping and bulk truck hatch access facilities.
4. Emphasize three points of contact when getting on and off equipment.
5. Examine, maintain, and use fall protection systems as per manufacturer recommendations.
6. Maintain travelways and access systems free of debris.
7. Provide adequate lighting.
Review of Enforcement
Safety Alert

Fatalities involving Miners falling off Equipment!

7 miners have died after falling from equipment since 2015.

Three fatalities occurred when miners attempted to mount or dismount equipment. One fatality occurred when a miner did not tie off in an aerial lift while conducting maintenance. Three fatalities have occurred in 2020 involving miners falling from trucks.

- Two of these involved closing the hatch of a bulk tanker truck.
- One involved falling from the top of a trailer while adjusting a tarp.

Between January 2019 and August 2020, MSHA issued 72 imminent danger orders for people working atop trucks, front end loaders, aerial lifts, bulldozers and railcars. The most common violations were equipment operators climbing atop their vehicles.

Best Practices

- Provide safe truck tarping and bulk truck hatch access facilities.
- Provide mobile or stationary platforms or scaffolding at locations and on work projects where there is a risk of falling.
- Reduce hazards. Design work areas and develop job tasks to minimize fall hazards.
- Have a program. Establish an effective fall prevention and protection program that provides task and site-specific hazard training.
- Provide a fall protection harness and lanyard to each miner who may work at an elevated height or a location unprotected by handrails. Ensure their use.
- Instruct miners to use three points of contact when accessing machines.
- Proactively enforce fall protection equipment usage and safe work-at-height policies and procedures with supervisors, miners, contractors, and truck drivers.

Report accidents and hazardous conditions: 1-800-746-1553
msha.gov | askmsha@dol.gov | @MSHA_DOL
Review of Educational Policy & Development
Resource Links for Mine Operators Contractors
Safety & Health Materials

MSHA offers a wide variety of mine safety and health materials to assist trainers and mine operators in promoting a safe and healthy environment at U.S. mines. We are always looking for new materials to share with the mining community. Please contact us at minetraining@dol.gov if you have any materials to share, or if you have any questions or suggestions regarding the safety and health materials on our website.

Small Mine Guide
A compliance assistance tool for small mine operators covering health and safety programs, training plan development, reporting practices, and more.

Searchable Database
Find safety and health manuals, hazard alerts, presentations and compliance guides organized by mine type and hazard.

Training Videos
A collection of videos covering health, safety and other mining-related topics.

ToolBox Talks
A series of discussion topics that can be used by small mine operators and others to hold safety and health discussions for their employees at their mining operations.

Fatality Reports
Mining fatality summaries with associated best practices to help prevent similar incidents.

Task Training
Concise guidelines for effective task training.

Health and Safety Alerts
Information on current and previous health, safety and equipment hazard alerts.

MSHA Handbook Series
A variety of handbooks describing inspection procedures, education & training procedures, and technical support procedures.

NIOSH Training Page
Education and training resources from the National Institute for Occupational Safety and Health.

Industry Shared Safety Material
This section contains material submitted to MSHA by the mining industry that has shown to be effective in reducing accidents and injuries. Please feel free to use any of this material to help prevent accidents and injuries at your mine or facility site.

Industry and MSHA Partnership Safety Material
This section contains material produced as a result of a partnership between MSHA and the mining industry. These partnerships are part of MSHA’s ongoing outreach efforts to provide compliance assistance to mining operators.

Instructor Materials
Instructor materials and reference guides for MSHA approved instructors and competent persons.

https://www.msha.gov/training-education/safety-health-materials
MSHA Fatal Alerts

Fall from top of truck trailer – Preliminary Report

Fall from top of truck trailer

Fall from top of bulk trailer

Fall into portable load out bin
https://www.msha.gov/data-reports/fatality-reports/2020/january-8-2020-fatality/fatality-alert

Fall 40 feet down a shaft

Ejected from a man-lift basket

Fall 12 feet because lost balance

Fall 19 feet through a 27 inch opening
MSHA Serious Accident Alerts

Current Fall Protection Safety Alert

Fall 20 feet during installation of building roof
https://www.msha.gov/mnm-serious-accident-alert-surface-gold

Fall 10 feet from cone crusher

Fall 15 feet from mine basket/electric shovel

Fall 7.5 feet from jaw crusher platform
https://www.msha.gov/mnm-serious-accident-alert-surface-maintenance-0

Fall 12 feet down a step ladder

Fall from a conveyor galley

Lost footing and fell
Training Videos

MSHA Shared Industry Training Material/Fall Protection - Ohio Aggregate and Industrial Mineral Association (Video)
https://www.youtube.com/watch?v=07x5uklonQs&feature=youtu.be

MSHA Training Video - Fall Protection
https://www.msha.gov/msha-training-videos

Personal Fall Arrest Equipment Task Training Guide for MNM

Ladder Safety Guide
https://www.msha.gov/ladder-safety-standards
NIOSH
FALLS IN THE WORKPLACE

https://www.cdc.gov/niosh/topics/falls/default.html
Ladder Safety

FALLS IN THE WORKPLACE

Aerial Lifts

Aerial lifts are powered and mobile platforms that are used for elevating workers to various heights, which exposes workers to fall hazards.

Training is necessary for anyone using aerial work platforms and equipment. In an effort to create awareness about common workplace hazards when using aerial lifts, NIOSH has developed educational tools and products. Employers, trainers, safety and health professionals, and aerial lift operators can use the following information to prevent work-related falls.

Note: NIOSH uses the term ‘aerial lifts’ as an overarching term to capture multiple types of lifts, such as scissor lifts and boom lifts. It is important to note that both OSHA and ANSI standards vary for different types of lifts.

Spotlight

NIOSH Aerial Lift Hazard Recognition Simulator

This free simulator provides realistic workplaces with multiple dangerous hazard types that scissor and boom lift operators can navigate from the safety of a computer. Experienced operators can use the simulator to refresh their knowledge, and new operators can familiarize themselves with hazards they may encounter on the job. Using the simulator is not a substitute for required training to operate aerial and boom lifts.

Use the NIOSH Aerial Lift Hazard Recognition Simulator today! See 'Tools' below for instructions to launch the Simulator from your computer.

| Fast Facts | + |
| Questions & Answers | + |
| Standards | + |
| Tools & Products | + |
| Other Resources | + |
| Acknowledgements | + |

https://www.cdc.gov/niosh/topics/falls/aeriallifts/LiftSimulator.zip
Training Resources for Falls From Equipment

Link to OSHA Fall Protection Website
https://www.osha.gov/SLTC/fallprotection/index.html

Link to NIOSH Falls in the Workplace Website
https://www.cdc.gov/niosh/topics/falls/default.html

NIOSH – Designing Safe Mobile Equipment Access
https://www.cdc.gov/niosh/mining/content/humanfactorsandergonomics/design/ingress_egress.html

NIOSH – Improving Ingress/Egress Systems on Mobile Equipment

NIOSH – Mining Product/Fall Protection: As Simple As ABC
https://www.cdc.gov/niosh/mining/works/coversheet2145.html
Mining Product: Infographic: Fall Protection: As Simple as A-B-C

Keywords: Fall protection, Fall protection devices, Falls

Original creation date: April 2020

Authors: M. Narawani, J. Pollard, B. Ester, J. Hric. L. Kocher

This infographic on fall protection helps workers identify three essential components of a fall arrest system: anchor, body harness, and connecting device. The body text details these steps and components, and the top and bottom banners provide data from the Mine Safety and Health Administration (MSHA) to support how important the proper use of fall arrest systems is to safety. Depending on their duties, mine personnel commonly have the need to use fall protection at work, and this infographic is designed to give them critical tips that will be easy to remember and easy to implement.

For Spanish speakers, download the same infographics with text in Spanish.

Reference - April 2020

NIOSH Number: 20059288

https://www.cdc.gov/niosh/mining/works/coversheet2145.html
FALL PROTECTION: As Simple as A-B-C

On average annually, MSHA issued 111 fall-related imminent danger orders for using the personal fall arrest system incorrectly or not at all.*

A
ANCHOR
Ensure that the tie-off point, consisting of either an anchorage and anchorage connector or a life line, is directly overhead.

B
BODY HARNESS
Be certain to use a full body harness that is sized to fit your height and weight, with a D-ring on the back to attach the lanyard snap-hook. The correct fit adjustments of the straps around the thighs, pelvis, waist, and shoulders are critical to the performance of the system.

C
CONNECTING DEVICE
Select the appropriate connecting device between the anchorage connector or life line and the D-ring of the full body harness that best suits the conditions of the work environment. Consider the fall distance and the work activity to be performed when making the selection.

Ensure that the anchorage point is rated for 5,000 pounds for each person attached and that all necessary safety fall prevention training is up to date.

To learn more, visit cdc.gov/niosh/mining

* Reported data based on an analysis of 1,957 imminent danger orders issued by MSHA between 2010 and 2017. Recommendations are based on OSHA 29 CFR 1910.146, Personal fall protection systems. April 2020
Fall Protection

Overview

OSHA has developed this webpage to provide workers and employers useful, up-to-date information on fall protection.

Why is fall protection important?

Falls are among the most common causes of serious work-related injuries and deaths. Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls.

What can be done to reduce falls?

Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls. OSHA requires that fall protection be provided at elevations of four feet in general industry workplaces, five feet in shipyards, six feet in the construction industry and eight feet in longshore operations. In addition, OSHA requires that fall protection be provided when working over dangerous equipment and machinery, regardless of the fall distance.

To prevent employees from being injured from falls, employers must:

- Guard every floor hole into which a worker can accidentally walk (using a railing and toe-board or a floor hole cover).
- Provide a guard rail and toe-board around every elevated open sided platform, floor or runway.
- Regardless of height, if a worker can fall into or onto dangerous machines or equipment (such as a vat of acid or a conveyor belt) employers must provide guardrails and toe-boards to prevent workers from falling and getting injured.
- Other means of fall protection that may be required on certain jobs include safety harness and line, safety nets, stair railings and hand rails.

https://www.osha.gov/SLTC/fallprotection/index.html
Training Material

Simple J-Style Tether

Can be used for any style truck or trailer
Training Material
Mobile Platforms
TRAM 2020 virtual summit

October 14 - 15

click here for details and registration!

Training Resources Applied to Mining (TRAM) Annual Conference 2020
National Mine Health and Safety Academy

As the country adapts to working, communicating, and collaborating in new ways, the TRAM Conference has also adapted by going virtual in 2020. This year’s Training Resources Applied to Mining Conference (TRAM) will be held online October 14-15, 2020. Featuring presentations from some of the industry’s most respected safety trainers, this tuition-free conference helps health and safety trainers improve their training skills and infuse their training programs with new ideas and materials. Participants can select from a variety of workshops and attend the conference remotely.
Training Materials Competition

Training in today’s mining industry is considered a foundational element in our mission to improve mine safety. Through the years, the training materials competition has fostered a new level of professionalism in the development of training materials. This competition is open to all sources of mining-related training materials. For more information on the training materials competition, or to request competition packets, contact Melody Bragg at 304-256-3531 or Bragg.Melody@dol.gov (This form is to be completed and mailed with your competition submittal. Do not email.) Training Materials Competition Entry Packet Link The deadline for entries is Friday, September 18, 2020.

Registration
To register for the 2020 TRAM Virtual Summit, please click on the LINK https://www.surveygizmo.com/s3/5739044/81450a543b6b

For more information about TRAM, contact Angela Blair at 304-256-3202 or blair.angela@dol.gov
Educational Field and Small Mine Services

EFSMS Web Page
https://arlweb.msha.gov/epd/efsms/

MSHA Training Questions Email Site
mshatraining@dol.gov

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Review of Mine Rescue Training & Contests
Review of DOL & MSHA COVID-19 Update
Questions?
Closing Remarks