

■ steelTalks (safety special series)

Plant, Equipment & Vehicles

worldsteel and 3M webinar series

14th July 2022

Expert Lecturer

Jason is an Application Engineer for 3M's Fall Protection division, residing professionally at the Red Wing Minnesota manufacturing plant. His passion of keeping workers at heights safe spans a 20 + year career in the fall protection industry.



Disclaimer

This presentation provides a general overview of Fall Protection Information and includes various 3M safety solutions. This webinar content should not be relied upon to make specific FPE selection, use and maintenance choices.

Local country or regional regulations and guidance varies, and the responsibility for the correct implementation of a fall protection programme in compliance with local country or regional regulations is with the employer.

This presentation should not be relied upon in isolation, as the content is accompanied by additional and/or clarifying information.

Thank you.

Contents

- Setting the Scene
- Low level Work at Height
- Low Level Falls From Height
- Anchor Location & PFPE Selection
- Hazards & Challenges
- Working on Vehicles
- Other considerations
- Recap

Setting the Scene


Accessing plant, equipment and vehicles presents some incredibly unique fall protection hazards, including the issue of low fall clearance, and often involves dealing with other issues such as heat and sparks from either the equipment itself or the work being carried out on it.

Working on vehicles or transportation logistics poses the dual issue of low fall clearance combined with the need to be highly mobile in order to be able to carry out the tasks required.

Low Level Work at Height



Low Level Working at Height



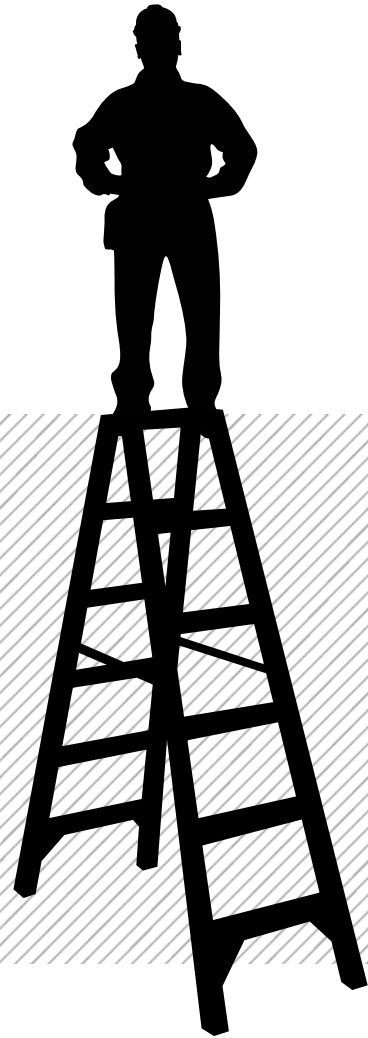
At low level height we are not prepared for a fall to happen

We believe we will not be hurt because we could jump safely

When it happens, we have no time to react

We are actually travelling faster than we think

Low Level Falls From Height



Height: 2m

Low Level Falls From Height

Height: 2m



Time:
0.64 secs

Speed:
22.54 km/h

Injury Types & Impact



Arm



Head



Back

Emergency
Care

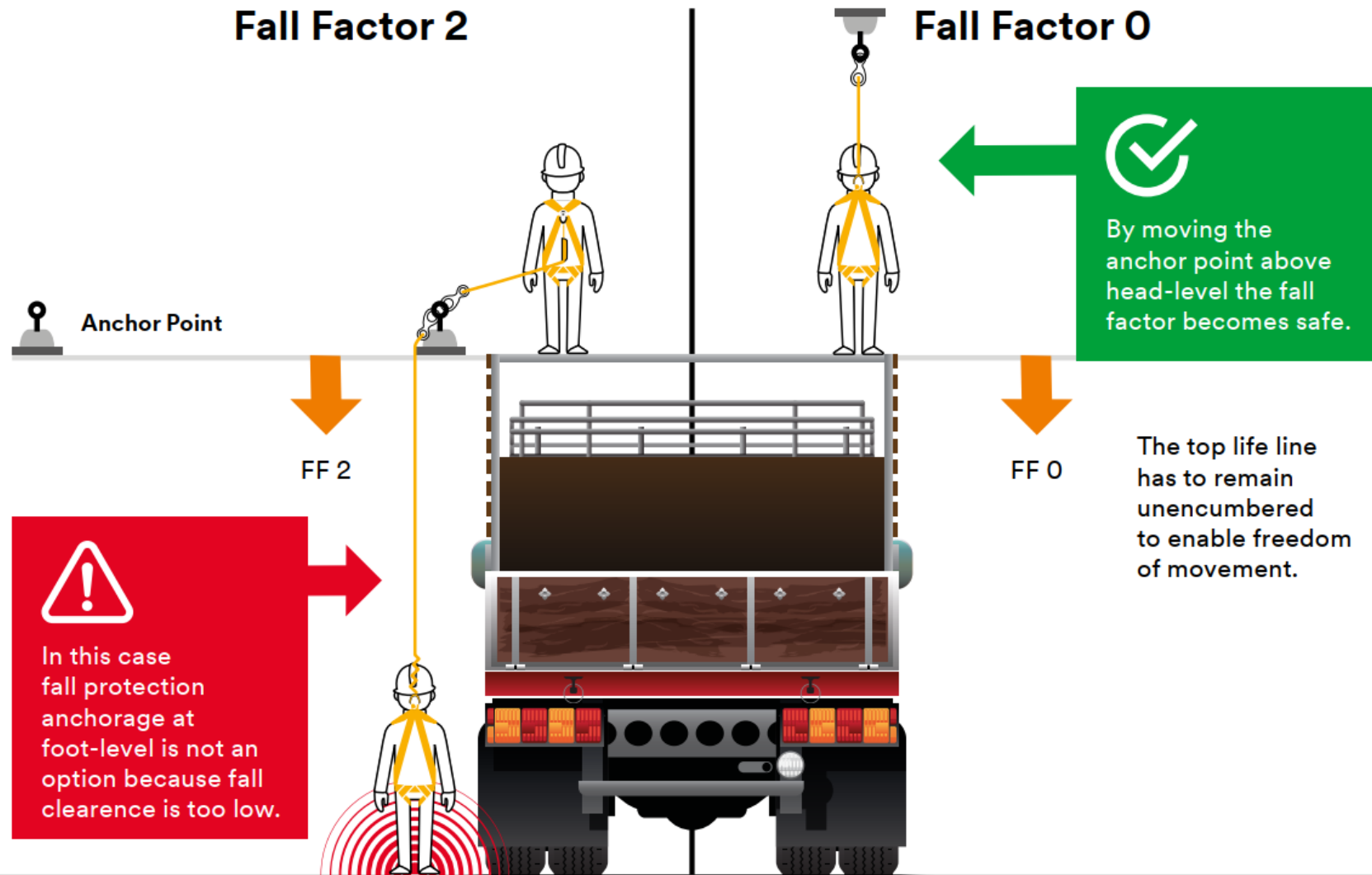
Hospitalisation

Rehabilitation

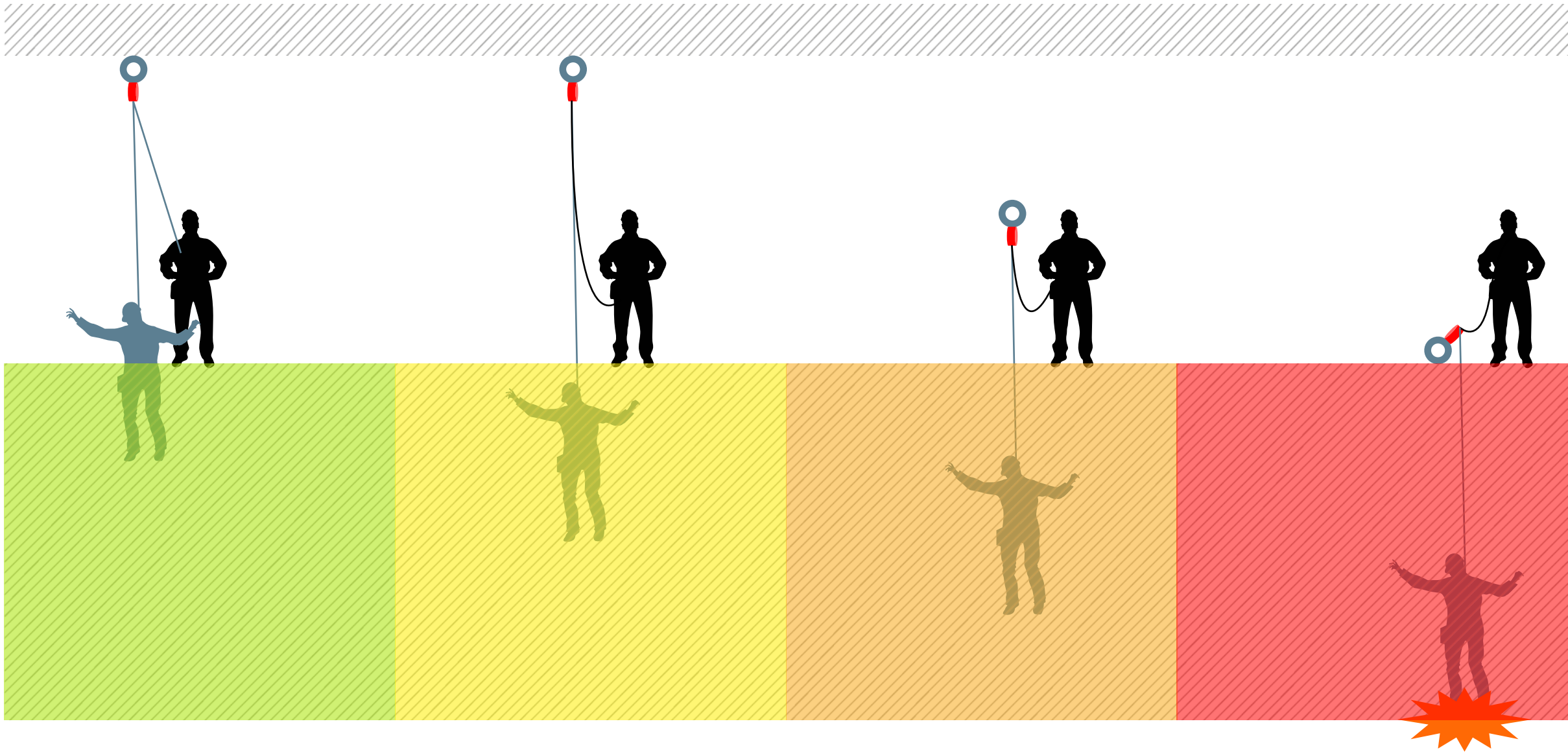
Permanent
Disability

Hazard / Challenge

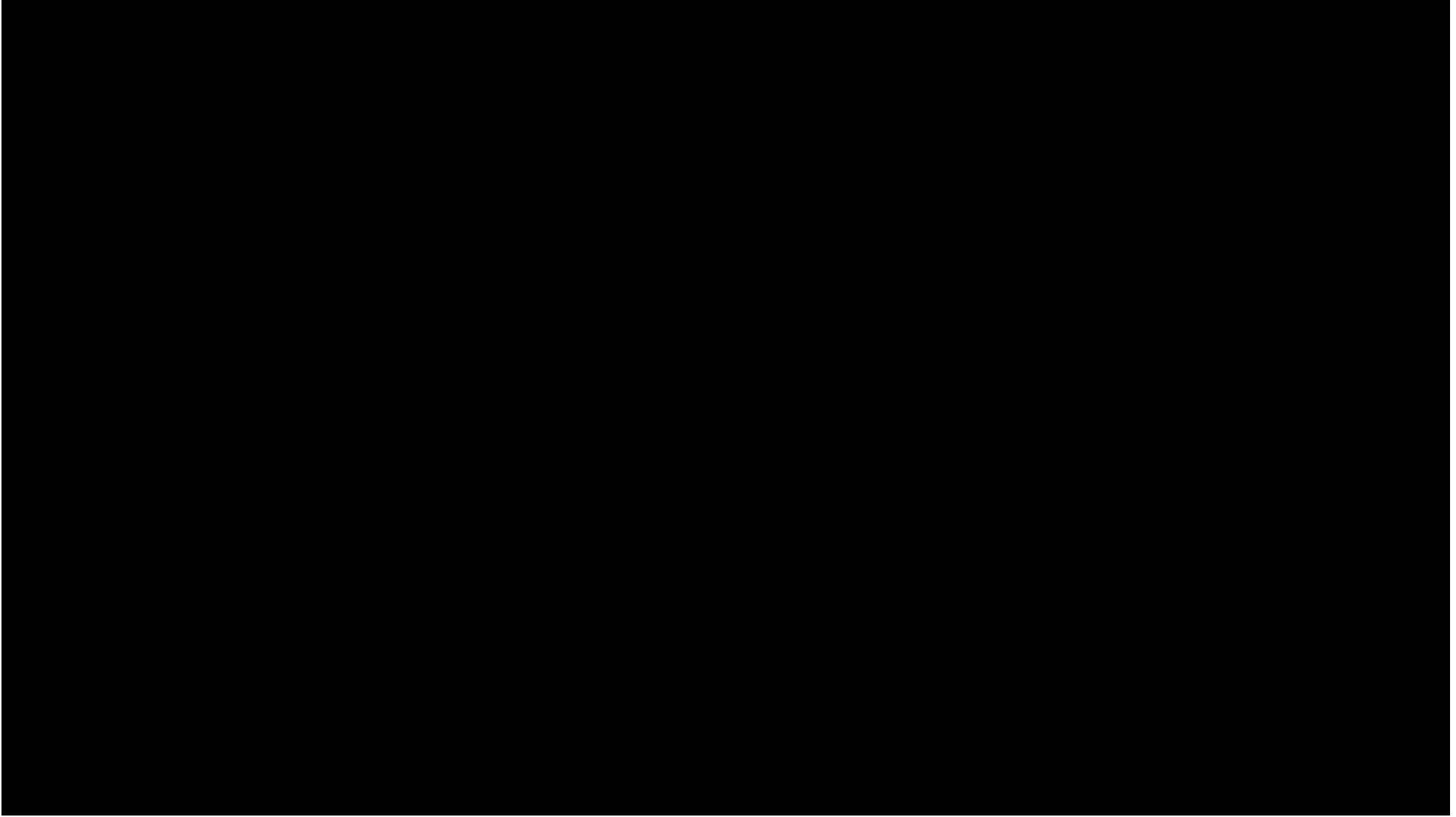
Low Fall Clearance



The effect of system location – Fall Factors



The effect of PPE Selection – Fall Clearance



Solution

Low Fall Clearance



Adjustable Lanyard



pSRL



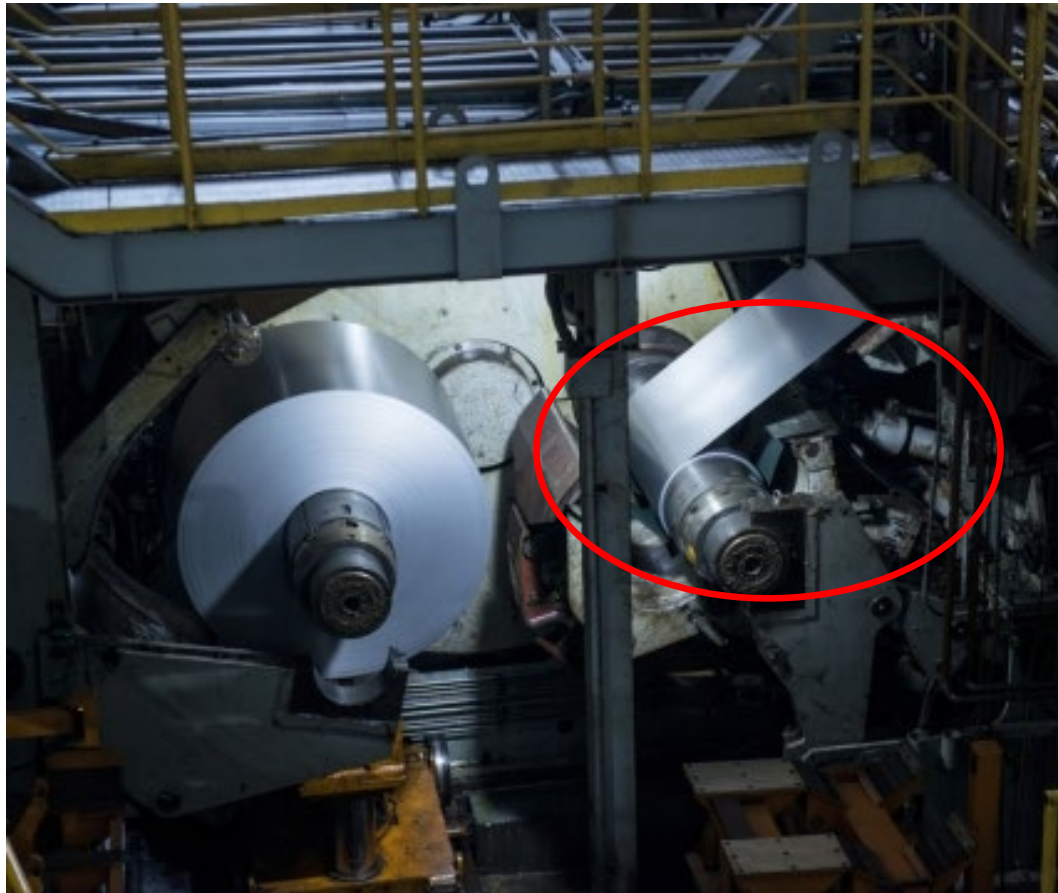
SRL



Rope & Grab

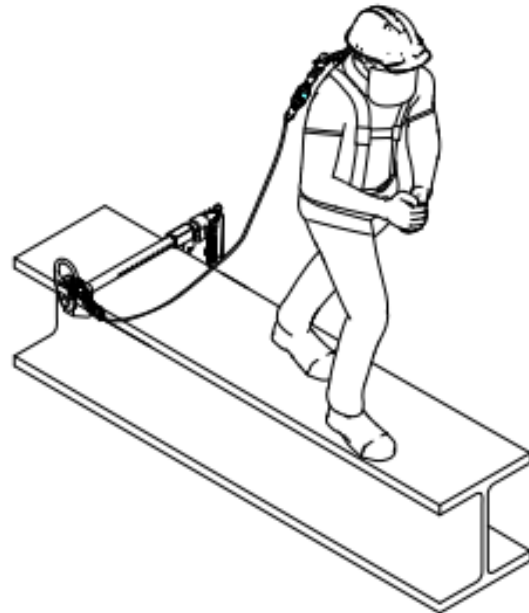
Hazard / Challenge

Suitable Anchor Point



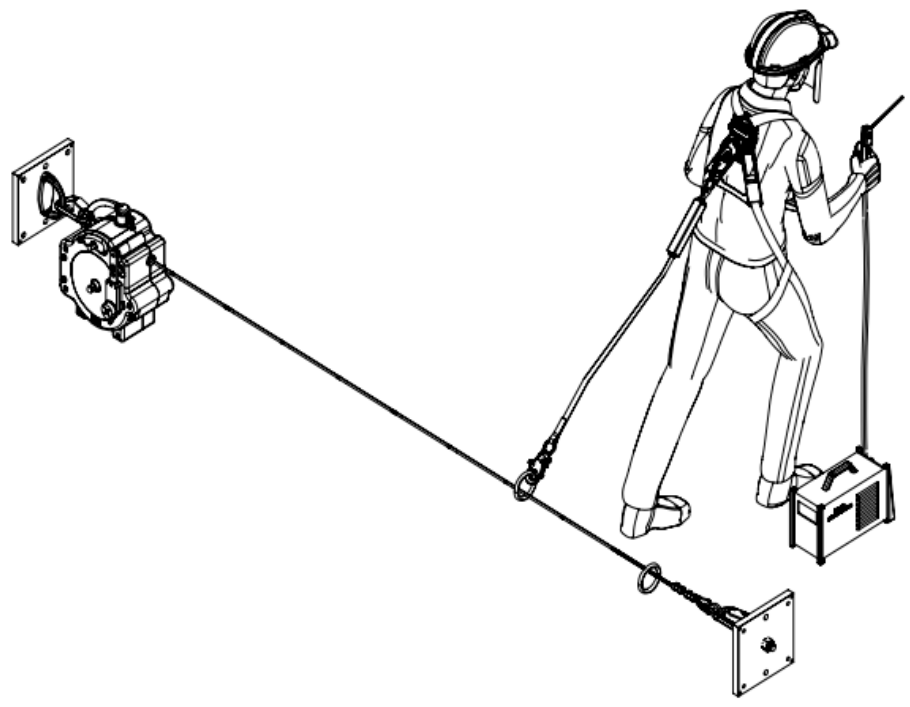
Solution

Suitable Anchor Point



Solution

Suitable Anchor Point



Solution

Suitable Anchor Point



Solution

Suitable Anchor Point



Hazard / Challenge

External Factors



- Loud Noise or Explosions
- Moving Equipment
- Vibrations / Shaking
- Heat / Cold
- Fumes / Smoke / Dust



Solutions

External Factors

- Work Planning / Communication
- Time Awareness of Events (Planned breaks)
- Lock out tag out
- Shut Down of Plant / Equipment
- Use of additional PPE (Respiratory / Hearing)

Hazard / Challenge

Working Conditions



- Loose Debris
- Oil & Lubricants
- Small /No Working Platforms
- Slippery Surfaces / Ice
- Difficult Access

Solutions

Working Conditions

- Clean down work area
- Temporary working platforms
- Working at certain times
- Working in Restraint
- Use of additional PPE (Respiratory / Hearing)

Solution

Working Conditions



Hazard / Challenge

Overhead Obstructions



Solution

Overhead Obstructions



Solution

Overhead Obstructions



Hazard / Challenge

No Overhead Structure



Solution

No Overhead Structure



Hazard / Challenge

Hot Works



- From Maintenance work (Grinding)
- From Nearby Process
- Machinery being worked on

Solutions

Hot Works

Body Support.



3M™ Protecta® Harnesses

Our welders harness is specifically designed to resist potential heat damage experienced in welding and grinding applications.

- Highly durable
- Heat resistant and flame retardant webbing
- Lightweight design

Specifications

- Webbing: Modacrylic over Kevlar®, 45 mm
- 370° C char temperature
- Stitching: High strength Kevlar® thread
- Breaking Strength: > 2600daN
- Buckles: Pass-through, High strength zinc-plated steel
- D-rings: Steel - zinc plated
- CE EN 361
- 140 kg weight capacity

Solutions

Hot Works

Connecting Devices.

3M™ DBI-SALA® Nano-Lok™ Self-Retracting Lifeline (SRL)



Self-Retracting Lifeline (SRL) specifically designed for welding, grinding and high heat applications.

Durable

Reinforced webbing with Nomex®/Kevlar® fibre to withstand sparks, weld splatter and other high heat exposure.

Versatile

Variety of DBI-SALA® Nano-Lok™ configurations, single and twin-leg, that can be connected at foot level to meet your specific needs.

Safe

Arc flashed to 8 calories (8 cal/cm²), for hot work use in applications like welding, grinding and torching. Meets or exceeds industry standards. CE EN 360:2002.

Hazard / Challenge

Dropped Objects



- Raw Materials
- Moving Machinery
- Chemical Tanks
- Other People

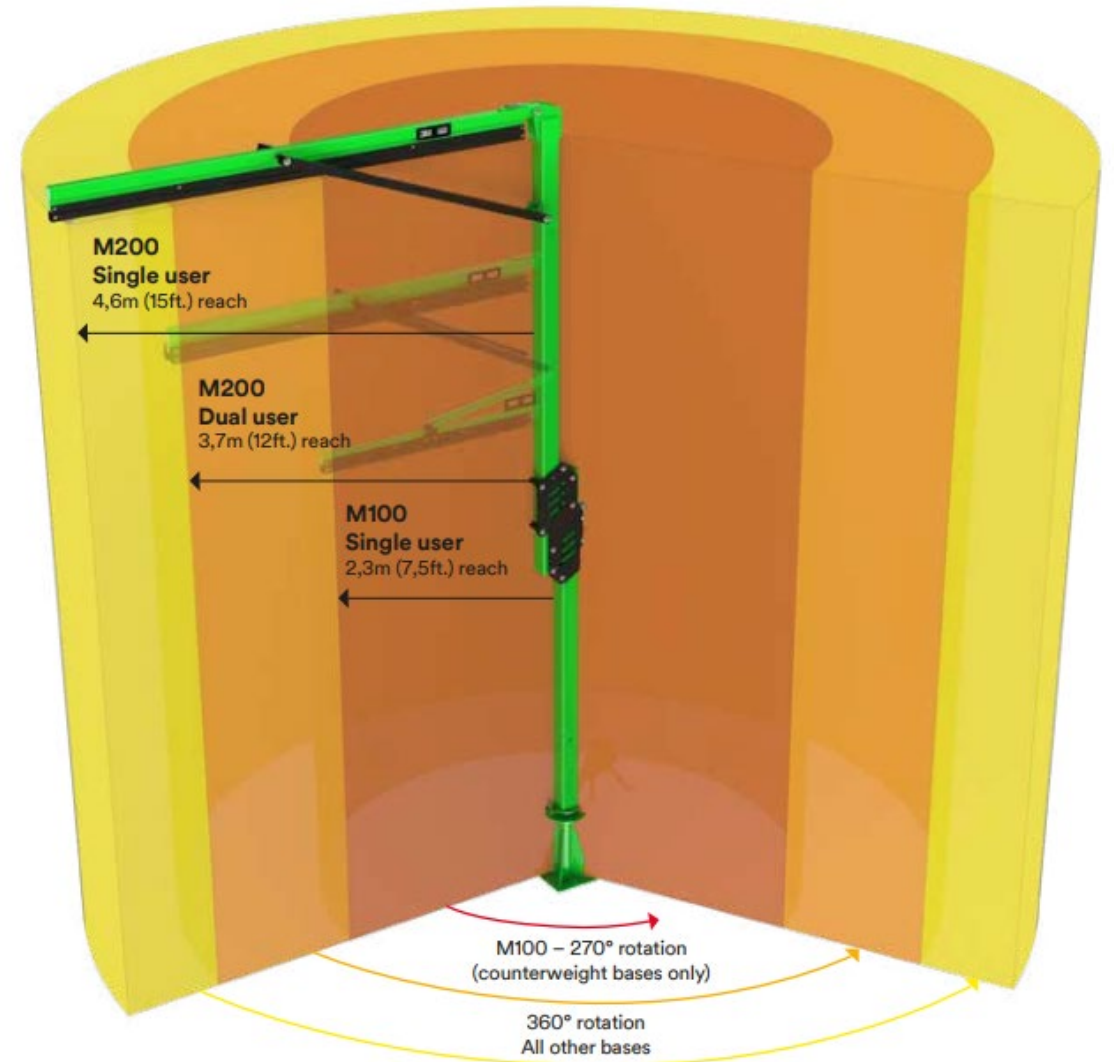
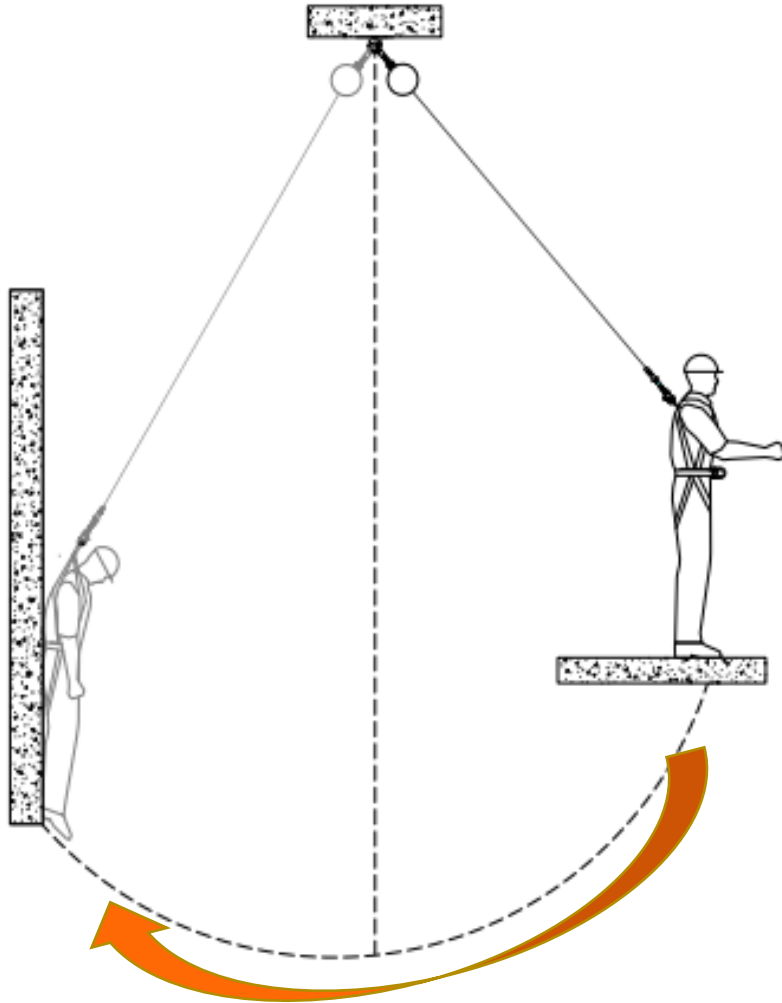
Solution

Dropped Objects



Other considerations

Moving around



Trains



- Often External
- Long Trucks & Cars
- Fixed in one location

Trains



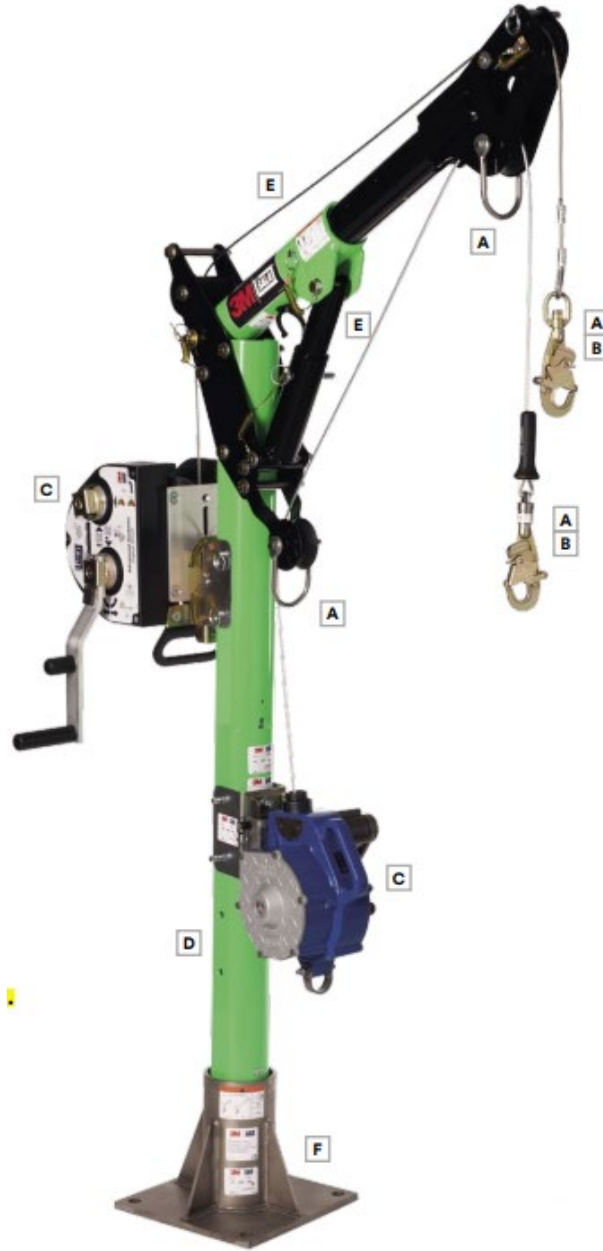
Trains



Shipping



Shipping



Trucks



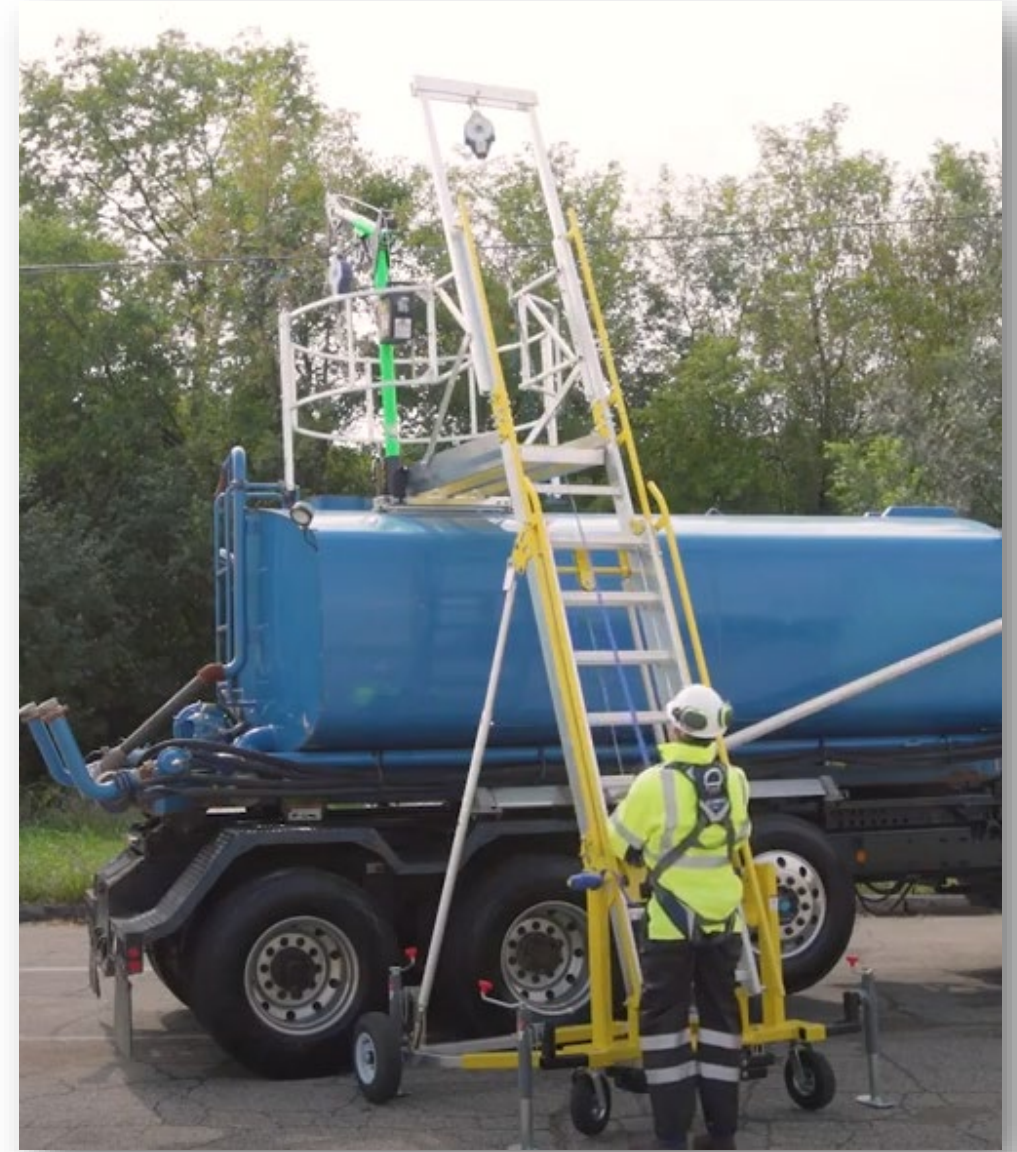
Trucks



Trucks



Trucks



Other considerations

Access



Other considerations

Rescue & Recovery



Other considerations - Noise & Communication



Hearing Protection / Communication.

3M™ PELTOR™ WS™ LiteCom Plus Headsets

- Hearing protector with built-in analogue two-way communication radio
- Available in 8 or 69 channel version; both with 121 sub-channels
- Level-dependent technology helps improve situational awareness and communication
- Noise cancelling dynamic microphone provides voice-operated transmission for hands free use

Ladders and related platforms



Proper training, follow warnings, inspection, avoid misuse.

Other considerations - Head Protection



Head Protection.

3M™ SecureFit™ Safety Helmet X5000 Series

- Secure, comfortable head protection for working at heights and other hazardous industrial jobs
- Suspension system incorporates exclusive patented 3M™ Pressure Diffusion Technology
- 4-point chin strap selector system unique to 3M makes it possible to switch between EN 12492 (Mountaineering helmets) and EN 397 (Industrial safety helmets) standards

Recap

Setting the Scene

Low level Work at Height

Low Level Falls From Height

Anchor Location & PFPE Selection

Hazards & Challenges

Working on Vehicles

Other considerations

Recap

Thank You

Any Questions

steeluniversity

steeluniversity.org | worldsteel.org | constructsteel.org | worldautosteel.org | issf.org

