

January 25, 2019

WORKPLACE ACCIDENTS AMUSEMENT INDUSTRY

1. AMUSEMENT RIDE ACCIDENTS

Each year, there are several workplace accidents in which workers or guests are struck by amusement rides while they are attempting to retrieve fallen objects, such as hats, sunglasses, cell phones, or other personal effects. Other accidents have occurred in which employees are using unorthodox methods to access the ride or are attempting to access the ride area while the ride is in motion. Many are severely injured or even killed.

A. Accident examples during 2018

- i. [May 13, 2018] An amusement park worker was injured on the Slingshot spinning coaster ride at Camden Park in Wayne County, West Virginia. Emergency crews dismantled parts of the coaster train to free the worker, 22-year-old Gabe Suttle, who was run over by the train. It is believed he may have dropped his sunglasses on the track and attempted to retrieve them while the ride was operating, leading to him being run over by the train carriages as they came through the loading station. The Slingshot, manufactured by SBF-Visa Group of Italy, had been operating incident-free at the park since its installation in June 2017.
- ii. [August 24, 2018] A midway worker at the Kentucky State Fair was seriously injured while setting up a KMG Fireball ride. North American Midway Entertainment (NAME), which owns the ride, and the Kentucky State Fair Board said in news releases the worker was injured while underneath the Fireball's unloading platform. NAME's Amy Girton said the accident happened during set up on August 18. "They were doing a pre-inspection of the Fireball, and the employee became injured while inspecting the unloading platform." It has since been revealed that the injured worker had crawled under the deck to fix something while a second employee released a valve, which lowered the loading platform without realizing his co-worker was underneath. This caused the platform to move in a direction that caused injuries to the employee's back.
- iii. [November 16, 2018] A worker was thrown from a Waltzer fairground attraction, which is similar to the Tilt-A-Whirl ride, during a Christmas light festival on Friday night in Plymouth, United Kingdom. The worker was seen standing on the moving floor of the Waltzer, manually spinning the carts while the ride was at full speed. As he spun one, he got thrown in the air and down

four steps onto nearby concrete. An eyewitness said the worker was complaining of hip pain and was unable to walk. He was immediately surrounded by other employees and ambulance staff who rushed to help.

2. PREVENTING ACCIDENTS

- A. Amusement rides are unique to the amusement industry. Ride vehicle machinery often weighs more than a thousand pounds per vehicle and when in motion, results in significant kinetic energy. Even the slightest impact will result in severe injury and is often fatal.

Operators need to inspect their rides daily to ensure the ride fencing barriers are intact to prevent guests from trying to enter the ride envelope to retrieve personal effects. International technical standards such as ASTM International and Euronorm define proven ride fencing barrier standards.

Employee access to moving rides is a much larger risk since they must maintain the ride vehicles and the facilities around the ride attraction, as well as manage the guest loading and unloading process. Good procedures and practices must be used to reduce the risk of employees accessing high risk areas when rides are in motion or could be put into motion.

3. SOME INDUSTRY BEST PRACTICES

A. Lockout/Tagout

- i. Lockout is a planned procedure which protects park employees and contractors from inadvertent operation of mechanical equipment and energizing of electrical circuits while performing work on or in the immediate vicinity of motor-driven, electrical, or pressurized equipment. It provides a safe system for park work environments.
- ii. General Procedure
 1. All park employees and contractors shall not work on or in ride enclosure areas, equipment, vessels, etc., that are not in a "zero" energy state.
 2. They must isolate energy sources that can be hazardous.
 3. These sources include, but are not limited to, electrical circuits, hydraulic and pneumatic energy, and forces of gravity.
- iii. Key Stages of Process Isolation
 1. Hazard identification
 2. Risk assessment and selection of isolation
 3. Planning and preparation of equipment
 4. Installation of isolation (typically personal lock)

5. Testing and monitoring the effectiveness of isolation
6. Carrying out activity
7. Reinstatement of equipment
- iv. When Should a Lock Be Applied?
 1. During maintenance periods – Morning inspections
 2. Cleaning – Both operations and maintenance teams
 3. Evacuation – Prevent unexpected start-up
 4. Enter restricted areas – Retrieval of lost property, inspection
 5. Isolate individual elements – When a train/gondola is out of service
 6. Annual Inspections – Prevent start-up
 7. Facility works program – Keeping gardeners, carpenters, plumbers, custodians, and other maintenance employees safe
- v. Creation and Culture
 1. Engage those working on the attractions throughout the creation of the **Lock Out Policy**.
 2. Make the policy practicable and easy to follow.
 3. Take a risk assessment approach.
 4. Ensure personnel involved in isolation are trained and competent.
 5. Audit and monitor systems to find deficiencies.
 6. Consider requiring a “permit to work” when exposed to ride hazards.
 7. Embed Lock Out into your **Safe Systems of Work**.
 8. Review the policy whenever modifications are made to an attraction.
- vi. Other Items to Consider
 1. Lost Property – Restrict the number of items guests take with them onto an attraction.
 2. Ride Perimeter Fencing – Ensure the fencing is suitable and not easily overcome by guests.
 3. Single Seats – Ensure individual seats can be isolated when not in service.
 4. Local Guidance / Law – Use available guidance to ensure compliance with local labor laws (OSHA, HSE, etc.).
 5. Human Error – Even the most experienced, well-trained team members can make mistakes. For higher risk tasks, get a second opinion on correct isolation once its isolated.

B. Single Key Access

- i. After spending millions on pressure mats, cameras, door sensors, infrared sensors, and procedures to e-stop rides in motion in the case of personnel entering the ride area, one large park operator implemented an effective, simple procedure to control access to rides. Restricting access to “one key.” The ride is de-energized once the key is removed from the master control panel. Every single lock in the ride, including access doors, ride fence gates, equipment rooms, etc., are keyed to the “one key.” No extra copies of the key are permitted. Worker locks are still applied to the master control panel power switch.
- ii. For instances involving multiple workers inside the ride, procedures are in place to permit access with worker locks applied.
- iii. “Ride-in-motion” procedures required that ride fencing be modified to allow maintenance personnel access to safe locations where they couldn’t be struck if they needed to monitor the ride vehicle while it is in motion.