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Safety Management for Amusement Parks

Each year, hundreds of millions of people visit amusement parks and carnivals in North America. For the price of admission patrons expect a day of entertainment, and they usually get their money's worth in the form of being frightened to death in haunted houses or being hurdled through the air on a roller coaster at 4 Gs. Patrons range from veteran ride enthusiasts to toddlers who've never been on an amusement ride before.

Amusement attractions range from kiddie trains to high-thrill giant roller coasters, carousels to whirling rides, inflatable bouncers to catapulted Bungy jumpers, wet playground equipment to 400-foot water slides. The newest rides often attain speeds of over 170 km/hr and have drops of over 300 ft. Due to the nature of the experience, many of these attractions present a potential for adverse effects or personal injury. Under normal operation, certain rides can cause riders to suffer headaches, nausea, and other effects whereas in case of an accident, riders can suffer injuries ranging from stubbed toes, minor cuts, and bruised knees to death and dismemberment.

Some common causes of ride-related injuries are the following:

- Inadequate supervision
- Poor design or construction
- Lack of secure restraint for young children
- Size mismatch between patron and ride
- Kids riding alone
- Intensity of motion and emotion
- Youth and inexperience on the part of ride operators and riders
- Riding or standing in an unsafe position or horseplay
- Equipment failure due to inadequate maintenance, or defective components
- Operator Issues (inadequate training, distracted operators, etc.)
- Rides under the control of patrons (e.g. water slides, Go-Karts, etc.)
- High-thrill rides with rapid and unanticipated changes in directions at high speeds

In order to reduce injuries and associated insurance claims and litigation, management of an amusement park should develop comprehensive safety procedures as part of the park's risk management program. In addition, serious efforts should be made to integrate safety into all aspects of the operation.

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Legal Framework

Amusement parks and travelling fairs are generally heavily regulated, though standards of safety vary from one jurisdiction to the next. In Quebec, the Régie du bâtiment du Québec (RBQ), has the responsibility of enforcing the sections of the Building Code and the Safety Code that apply to amusement parks. (The Building Code applies to the design and construction of the rides and the Safety Code applies to the operation of these rides.)

To ensure that owners respect the Safety Code, the RBQ performs physical inspections of rides and provides remedial notices to owners or operators whenever an inspection reveals that a provision of the Safety Code is not observed. The RBQ also has the power to institute criminal proceedings against an owner and to order the shutdown, evacuation, or demolition of a ride.

In Ontario, the responsibility for ride safety falls with Technical Standards & Safety Authority (TSSA), which falls under the responsibility of the Ministry of Consumer & Commercial Relations. It is a legal requirement for owners and operators of amusement rides to be licensed and to obtain a permit for each ride. The TSSA published the Amusement Ride Operators' and Attendants' Safety Handbook which provides best practice procedures. Similar approaches have been taken in other Canadian provinces though the specific safety regulations vary considerably between the provinces.

In the United States, there is a distinction between fixed-site amusement rides and rides in carnivals and other mobile attractions. Amusement rides in carnivals are subject to federal regulations and fall under the jurisdiction of the Consumer Product Safety Commission whereas the regulation and inspections of rides in fixed-site amusement parks are left up to the state or municipality. As a result, oversight varies greatly among the different amusement sites.

Best Practices for Amusement Parks

In addition to complying with local safety regulations, the owner and operator should develop a comprehensive safety program to reduce the potential for injuries to employees and site visitors as well as to better respond to injury claims.

To be effective, the safety program should include the following elements:

- Certification of the design and installation of ride equipment in an amusement park. This includes confirmation that the design conforms to the applicable standards and inspection and testing of the ride prior to commissioning.
- The provision of a comprehensive operations manual providing instructions for the safe operation and use of a ride.
- Ensuring that an adequate number of operating and supervisory staff is maintained at the ride at all times. A minimum staffing level should be set for each ride in accordance with the manufacturer's recommendations.
- A formal preventive maintenance program in accordance with the manufacturer's recommendations. This program should encompass visual inspections by operators and attendants, routine maintenance by in-house mechanics, and periodic inspections by specialized contractors.
- A formal training program for ride operators and attendants encompassing all safety aspects of the park operations including: general health and safety knowledge, dealing with visitors who misbehave, dealing with defects and malfunctions, reporting procedures for accidents or

incidents, emergency procedures, safe operation of specific attraction, safe loading and unloading of riders, details of passenger restrictions, use of passenger restraints, etc.

- A formal training program for mechanics responsible for the maintenance of amusement rides.
- A program to ensure that all relevant safety information is adequately communicated to the patrons and that the ride operator enforces the safety requirements prior to commencing the ride.
- Formal incident reporting procedures to ensure that employees report any incidents and that these reports are reviewed by management and the appropriate corrective action is taken.
- A comprehensive emergency plan addressing ride shutdown, evacuation, rescue of trapped patrons, provision of first-aid to injured riders, etc.
- A formal record retention program to allow the quick retrieval of all pertinent documents relating to any of the above elements.

Conclusion

Quest Loss Control Services Inc. can review a facility's safety program and provide practical guidance to implementing the above elements. We share the amusement park's operator's desire to ensure that each ride provides its patrons with the ultimate thrills without any injuries or other adverse effects.