



Technical Bulletin 97-2

DATE: November 24, 1997

TO: Operators of all Arrow Coasters, Shoot-the-Chutes and Flume Rides.

SUBJECT: Revised safety requirement for Arrow rides.

REQUIRED ACTION:

Implement the following.

A. After a review of the rider height requirements on Arrow rides and the need for consistency on like rides, the following are Arrow's requirements for the minimum height of riders using each type of ride.

1. All riders of any Arrow ride containing any upside down elements (loops, corkscrews, etc.) must be at least 48 inches tall.
2. All riders of Arrow hyper-coasters (Magnum, Desperado, Titan, Pepsi Max) must be at least 48 inches tall.
3. All riders of Arrow suspended coasters must be at least 42 inches tall.
4. All riders of Arrow runaway mine trains must be at least 48 inches tall.
5. Riders on Arrow flumes must be at least 46 inches tall to ride alone.

Children under 46 inches tall must be accompanied by a person at least 16 years old.

No infants or children in arms are to be allowed on an Arrow flume ride.

6. All riders on an Arrow shoot-the-chute must be at least 48 inches tall.

- B. Signage. It is the owner/operator's responsibility to place warning signs in prominent locations at the entrance to the ride and along the queue line area, so they can be seen by all persons who are about to board. Signs must include, as a minimum, the following information:
1. The (name of ride), by its very nature, creates forces and speeds that may not be acceptable to some persons and may cause injury to some riders with pre-existing medical conditions.
 2. Riders must be in good health, and those with the following conditions must not board the (name of ride).
 - a. Expectant mothers.
 - b. Those with high blood pressure.
 - c. Those with heart conditions.
 - d. Those with neck or back problems.
 - e. Those who have had recent surgery.
 - f. Those with any impairment that would prevent normal seating or use of the safety restraints as provided.
 3. All riders must sit up straight with back and shoulders against the seat back and heads erect to avoid possible injury. (Note: This is a very important warning and should be included in the ride spiel, as we have seen a number of injuries on coasters and shoot-the-chutes in which the passenger leans forward to avoid the water splash or to avoid seeing where they are going and then when the boat hits the water, or the coaster bottoms on a dip, they are pulled down to bump their nose or mouth on the hand bars.)
 4. Riders must keep their hands, arms, legs and feet inside the vehicle at all times to avoid possible injury.
- C. Ride Restrictions. **WARNING:** The following lists certain ride restrictions that are for the benefit of the passengers' safety.
1. The vehicles are designed to carry only one passenger per seat. Sometimes, two children, or an adult and a child may attempt to share a seat - this must never be allowed. Children in arms or infants must never be allowed.
 2. Passengers must be (see ride requirements as indicated in Section A.) tall to be properly secured by the restraint bar.

3. It is the responsibility of the ride owner/operator to insure that all passengers are adequately restrained by the restraint mechanism.
4. If the passengers are either overly large or very small so that they cannot, in the opinion of the owner/operator, be properly or safely restrained, then they must not be allowed to ride.
5. There are, most likely, other persons who should not ride the ride due to various disabilities that are beyond simple guidelines. The decision as to whether they are allowed to ride is solely the responsibility of the owner/operator of the ride.

It is suggested that all of those riding should be able to sit up properly in the seat and brace themselves adequately against the forces created by the ride.

The above requirements may, or may not, change Arrow's previous requirement or your actual practice.

D. Response to injuries.

1. In the event that injuries occur, or are reported to have occurred, on the Ride, the owner/operator shall immediately suspend public operation of the Ride, and notify Arrow immediately, if the injuries include:

Any injury to a passenger that falls within the definition of serious injury as given in A.S.T.M. Standard Guide F1305-94.

Any two injuries to passengers during one operating day and said injuries are such they require referral to a hospital for evaluation or treatment, but do not fall within the definition of serious injury as given in ASTM Standard Guide F1305-94.

2. In the event two passengers are injured during one operating day or four are injured during one seven day operating week, and such injuries fall within the definition of minor injuries as given in ASTM Standard Guide F1305-94, owner/operator must notify Arrow within 24 hours of such injuries, so that Arrow and the owner/operator can decide on the correct course of action regarding continued operation of the Ride.
3. If the owner/operator believes there is a defect in the ride at any time, then public operation must be suspended and Arrow must be notified immediately.

4. The owner/operator's failure to suspend public operation of the ride and/or failure to notify Arrow in these circumstances shall constitute the owner/operator's irrevocable acceptance of the Ride, shall cause any warranty period that exists to end without notice, and shall void any and all of Arrow's warranties and indemnities provided by the purchase agreement or by law.