

BARREL TRAINS/RIDES

Incidents involving Barrel Rides are not unusual. There are however management steps which if applied, may prevent a number of those incident occurring, apart from operator error or public not following advice whilst the ride is in motion.

Like all equipment we use in our industry, the design and manufacture are a key component. It makes no difference whether the attraction purchases a set of Barrels from a supplier, or whether they make them themselves, they still must be built to a standard that prevents failure or instability when in use. The person who designs or makes the Barrels is responsible for making sure they are designed and manufactured so they are safe and stable. They must ensure they have considered what can fail, what circumstances will cause the failure, and ensure the resultant effect is contained so the passenger is not put at risk. They must also ensure they are fitted with the correct safety equipment to ensure the passenger is safe when getting in, when the ride is in motion, and when the passenger is getting out. Legislation is very clear on these requirements and prohibition from use will be applied if the Barrel/s are not compliant.

These rides are very popular, and it is not the intention of this alert to stop the activity from happening, just to ensure members have sufficient information to ensure they have effective controls in place.

Like all operations on your attraction, you must ensure you have a properly considered risk assessment in place and your controls measures properly introduced. Staff training and monitoring are most vital to ensure those controls are followed.

1. The structure, design and stability of the ride **MUST** be risk assessed before the operation of the ride. The structure and stability risk assessment should be completed by the designer or manufacturer and advice given to the operator regarding any limitations that should be imposed due to the design.
2. Likewise, the track and the suitability of the track for the ride experience you are wanting to achieve must also be risk assessed before the ride commences, and the risk assessments reviewed periodically. Weather conditions and ground stability will also be part of that assessment. .
3. Most barrel rides in use must be designed and built in accordance with BS EN 13814, Fairground and Amusement Park machinery and structures –Safety’. The manufacturers may either / also state that they have designed and manufactured the equipment in accordance with HSE guidance document HSG 175 – ‘Fairgrounds and amusement parks Guidance on safe practice’ (see <http://www.hse.gov.uk/pubns/priced/hsg175.pdf> .) Make sure your ride complies at the point of manufacture and supply, that you complete the maintenance inspections at least every 3 months to ensure the fitting and structure are consistent with the standards, and you are operating your ride in accordance with this BS Standard or the HSE Guidance. By following the steps below, you can be reasonably sure you are able to demonstrate compliance. If you are unsure of the standard the equipment was designed under, ask your supplier for assurance.
4. Ensure you have a copy of, and you are following, the manufacturer’s guidance on inspection and maintenance at all times.
5. Do not exceed their recommendation’s regarding speed or stability of the ride.
6. The ride, the seatbelts, the seat supports, the tyres and the car coupling must be checked before each ride.
7. Ensure a member of staff, properly trained, inspects the ride and the route before you start a day’s operations. Seat belts and car coupling must always be part of this inspection.

8. Some trains have as many as 12 cars, towed by equipment which does not offer maximum control when in use, particularly breaking. Members should consider not exceeding 8 or 10 as a maximum number. Where up to 8 cars are used in a train, then the rear car must be fitted with a Roll Bar to prevent the cars from turning over and trapping the passengers.
If 9 to 10 cars are used, then a second Roll Bar should be fitted to the centre Car.
If up to 12 cars are used, then a third Roll Bar is recommended they be fitted to cars 4 and 8 as well as the last car.
9. ATV or Tractors designed and fitted with the correct tow bar and fitted with rear view mirrors to give the driver full view of the conduct of the ride, are considered the most effective method of towing. They offer better stability options, together with the driver having full vision of what is happening, plus it allows them to look fully where they are going.
10. The ride should not exceed 6 miles an hour. Although some passengers like the thrill of going faster, it is very difficult to stop the ride quickly if a passenger shows signs of discomfort or distress.
11. During extremely busy operating times, consider providing a Driver's Assistant, whose sole purpose is to maintain visual contact with the carriages and their occupants. You should also consider reducing the number of carriages used during quieter times.
12. Driver's and Driver's Assistants must be over 18 years of age and the Driver must hold a current driving licence as well as training proof for the vehicle being used for towing. Proof of monitoring/supervision will also apply to ensure the ride is being operated to the desired standard.
13. It is very difficult to know sometimes how a child is going to react when the ride is in motion. Ensure you have agreed a plan with the driver of how they are to respond should a child become upset or agitated. One operator starts their ride off by completing a low speed circle right near the start to give the occupants the feel for the ride in motion. This is done near to the parents and gives an opportunity to act should it be obvious a child is not happy.
14. Speed control is vital and, together with the terrain and tightness of turn, will be the most common reason for the cars overturning. Carefully assess the route you use, where you turn, the appropriateness of the location and the speed at which you turn. Do not fall into the trap of believing that, by removing cars, you can always go faster or turn tighter. Some adjustment may be possible, but it needs assessing and managing.
The longer the train, the more unstable the ride will get at speed. When turning the back end will whip round and the middle car may chatter sideways, those are both signs of instability.
Weather conditions will also cause the ride to operate differently. The speed and turning circle must be adjusted if the ride is not responding as it should.
15. Avoid using rough terrain or excessive slopes. These again will cause the train to become unstable. Properly designed roller coaster type slopes, properly located and approved, can be used but under controlled circumstances. Likewise, metal gates laid on grass for additional sensation is also permitted, the metal structure must be regularly checked to ensure the metal has not deteriorated and cause a tyre to puncture.
16. Always use cars with fitted seat belts and the belts are adjustable to ensure the security of the occupant before the ride commences. Do not leave it to the parents to secure the seat belt, check that it has been done before you start.

Further information concerning this message can also be obtained from:

<http://www.hse.gov.uk/pubns/priced/hsg175.pdf>