

Guarding juvenile fairground equipment

Children's fairground rides draw youngsters in with their flashing lights, bright colours and music. However, young people have less awareness of hazards and risks and so ride controllers must ensure they have done all they reasonably can to protect them from harm.

Parents and other carers have an important part to play in keeping their children safe but they may not be aware of the dangers either; as every parent knows, even the best-behaved children can sometimes do unpredictable things! Fairground machinery must be safe when in use; controllers need to anticipate and deal with the possibility that people will sit on steps/platforms, may try to get through fences, try to touch or have accidental contact with parts of the ride as they walk past etc.

The need to make and keep children safe does not mean that all children's rides must be fenced. Many are low, slow moving machines that run within the footprint of the ride, have no unguarded hazards or entrapment risks and both the machine and its perimeter, can be safely monitored and most importantly, controlled by the operator. In some cases a raised platform may be enough to deter/prevent inadvertent access to low risk machinery with no unguarded hazards and in such cases, it is unlikely the machine will need any further measures.

Having said that some rides will require fencing in order to prevent access to dangerous moving parts.

Machine designers, inspectors and controllers all have a part to play in ensuring machines are safe. Controllers must ensure they have identified and dealt with all the hazards on the machine and regularly check for damaged or missing parts. Controllers cannot simply rely on a having a DOC as damage may have happened or conditions changed since it was issued.

Controllers are ultimately responsible for ensuring the safety of their rides by identifying hazards and managing the risks. Hazards which should be considered include:

- Gaps or openings that will allow people access to the dangerous parts of the machine when it is operating,
- Parts of the machine swinging out of the ride footprint in ways that may hit people watching or passing, or could collide with other machinery,
- Trapping, nipping, crushing or shearing hazards such as flanged wheels, some types of restraint, unguarded, accessible chain and sprocket/V belt drives etc.
- Reachable moving parts that can trap or crush such as moving passenger units, gates etc.
- Unguarded danger areas underneath or behind machines,
- Areas that cannot be seen at all times from the operators position,
- Electrical items such as lights, connectors, control box access.

This list is by no means exhaustive!

It is worth noting that at first glance two rides may look the same, however a more detailed look may reveal different hazards. Manufacturers do not necessarily make all versions of the same machines exactly the same (designs change and improve) and there are some very similar looking machines made by completely different manufacturers. Once identified, controllers must find ways to eliminate those hazards or control the risks. It is always best to deal with the risks at the source if possible, so covering dangerous drive belts, ensuring electrical equipment is safe and so on will reduce the need for fencing. The European Standard for fairground equipment (BS EN 13814) suggests that different classes of machine can employ different guarding standards and whilst this may be true, the overarching legal duty is to ensure the machine is safe. The Health and Safety at Work Act is the law, the Standard is guidance.

HSG 175 contains advice about how to prevent access to dangerous parts of machinery but in many cases, some form of barrier or fencing is going to be the most effective way to guard machines. If this is the case it must be 1100mm tall and have rails to ensure there is no gap more than 100mm anywhere in the fence. It must be designed and put together so people can't be trapped in it, can't easily climb over it or fall through any part.

Gaps in the fences must be kept to the absolute minimum in size and number (maximum 4) and should be supervised or closed off with fences or offset barriers when the machine is running. Do not assume that just because the ride was supplied with fencing that it will be adequate in all circumstances.

If barriers are identified as a risk control measure they must be far enough away from the machine to prevent riders from contacting any part of it and to prevent people outside touching any part of the moving machine or riders. Areas where parts of a machine swing or move outside the footprint e.g. wave-swingers, paratroopers, must also be guarded (unless the moving parts are at least 2.5m above the ground) and any areas where people may be standing or waiting must also be safe.

When setting up on uneven ground the supplied or standard fencing may not be effective at guarding the machine itself or at covering access to danger areas behind or underneath it. Make sure you have spare fencing with you if you need it so you can operate the machine safely.

The HSE are going to be looking at risk control on juvenile machines in the coming season so controllers should make sure their machines are safe or fenced effectively if they need to be. If in doubt, they should ask their ride inspector. IBs should make sure they see any fences when they test the machine; it is a safety feature and should be part of the annual test.

Ride inspectors should be able to answer most of the questions controllers may have about this or they can contact HSE direct.

M Sandell
Health and Safety Executive