GENERAL GUIDE
FOR AMUSEMENT DEVICES

This General Guide provides information on how to manage the risks associated with amusement devices and passenger ropeways at a workplace.

Unless otherwise stated the term amusement devices in this Guide includes both amusement devices and passenger ropeways.

This General Guide is supported by information sheets for small business including information for owners and managers; plant designers, manufacturers, importers and suppliers; a checklist for operators; and information sheets for inflatable amusement devices and annual inspection and records.

What is an amusement device?

An **amusement device** is an item of plant operated for hire or reward that provides entertainment, sightseeing or amusement through movement of the equipment, or part of the equipment, or when passengers or other users travel or move on, around or along the equipment.

Amusement devices do not include:

- a miniature train and railway system owned and operated by a model railway society, club or association
- a ride or device that is used as a form of transport and that is, in relation to its use for that purpose, regulated under another Act or an Act of the Commonwealth
- a boat or flotation device that is solely propelled by a person who is in or on the boat, or a device that is not attached to mechanical elements or equipment outside the boat or device and that does not rely on artificial flow of water to move
- plant specifically designed for a sporting, professional stunt, theatrical, or acrobatic purpose or activity
- a coin-operated or token-operated device that:
  - is intended to be ridden, at one time, by not more than four children who must be under 10 years old
  - is usually located in a shopping centre or similar public location, and
  - does not necessarily have an operator.

What is a passenger ropeway?

A **passenger ropeway** is a powered ropeway used for transporting, in a horizontal or inclined plane, passengers moved by a carrier that is:

- attached to or supported by a moving rope, or
- attached to a moving rope but supported by a standing rope or other overhead structure including in relation to the powered ropeway the prime mover, any associated transmission machinery and any supporting structure and equipment, but does not include any of the following:
  - a cog railway
  - a cable car running on rails
  - a flying fox or similar device, and
  - an elevating system for vehicles or boat style carriers associated with amusement devices e.g. an elevating system for a log ride or boat flume ride.

The designs for passenger ropeways must be registered with the regulator—see the section on *Registering an amusement device* in this Guide.

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Who should use this Guide?

You should use this Guide if you own, hire, lease, handle, store, transport, maintain or manage the use of amusement devices in the workplace.

Plant registration requirements for amusement devices and passenger ropeways are in the *Registering an amusement device* section of this Guide.

Who has duties under the law?

Everyone in the workplace has a work health and safety duty. The main duties are set out in Table 1.

Table 1 Duties in relation to amusement devices

Who	Duties
A person conducting a business or undertaking	**A person conducting a business or undertaking** has the primary duty to ensure, so far as is reasonably practicable, workers and other people are not exposed to health and safety risks arising from the business or undertaking. This duty requires the person to manage risks by eliminating health and safety risks so far as is reasonably practicable, and if it is not reasonably practicable to eliminate the risks, by minimising those risks so far as is reasonably practicable. It also includes ensuring so far as is reasonably practicable the: ■ provision and maintenance of safe plant including amusement devices, and ■ safe use, handling, storage and transport of plant. The Work Health and Safety (WHS) Regulations include specific duties for a person conducting a business or undertaking with management or control of plant including amusement devices. If you own an amusement device you are the person with management or control of the amusement device. If you hire or lease an amusement device you may have management or control of it for the period you have hired it. Both you and the person you have hired or leased it from will have duties to eliminate or minimise the risks associated with the plant, so far as is reasonably practicable.
Designers, manufacturers, suppliers and importers	**Designers, manufacturers, importers, suppliers and installers** of amusement devices must ensure, so far as is reasonably practicable, the plant is without risks to health and safety. This duty includes carrying out analysis, testing or examinations and providing specific information about the plant. Information must, so far as is reasonably practicable, be passed on from the designer through to the manufacturer and supplier to the end user.
Officers	**Officers**, such as company directors, have a duty to exercise due diligence to ensure the business or undertaking complies with the WHS Act and Regulations. This includes taking reasonable steps to ensure the business or undertaking has and uses appropriate resources and processes to eliminate or minimise risks from plant.
Workers and others	**Workers and other people at the workplace**, like visitors, must take reasonable care for their own health and safety, co-operate with reasonable policies, procedures and instructions and not adversely affect other people's health and safety.

How can risks associated with amusement devices be managed?

Use the following steps to ensure, so far as is reasonably practicable, that workers and other people are not exposed to health and safety risks from amusement devices at the workplace:

#1 Identify hazards

1. **Find out what could cause harm.** The following can help you identify potential hazards:

- Walk around your workplace and visually inspect amusement devices to identify any problems. Consider how they are operated, their design characteristics, how patrons use them and local environmental factors like overhead and underground electrical services.
- Ask your workers about any problems they encounter with amusement devices at the workplace including with operation, inspection, maintenance, repair, transport and storage requirements.
- Capture and record problems raised by patrons that they encounter at your workplace.
- Review your inspection, test and maintenance records e.g. log books and incident and injury records including near misses.
- In designing an amusement device, consider any incidents with similar devices and feedback from operators of similar devices.
- When purchasing, leasing or hiring an amusement device consider the suitability of the device for your intended use e.g. age/height/mass limitations on patrons, ease and safety of setup/dismantling and ground support limitations, especially for mobile devices.

#2 Assess risks

2. **Assess the risk.** In many cases the risks and related control measures will be well known. In other cases you may need to carry out a risk assessment to identify the likelihood of somebody being harmed by the hazard and how serious the harm could be. A risk assessment can help you determine what action you should take to control the risk and how urgently the action needs to be taken.

#3 Control risks

3. **Take action to control the risk.** The WHS laws require a business or undertaking do all that is reasonably practicable to eliminate or minimise risks.

The ways of controlling risks are ranked from the highest level of protection and reliability to the lowest. This ranking is known as the hierarchy of risk control. You must work through this hierarchy to manage risks.

The first thing to consider is whether hazards can be completely removed from the workplace. For example, risks can be eliminated by selecting an amusement device that has been designed to eliminate hazards that may exist in other similar amusement devices.

If it is not reasonably practicable to completely eliminate the risk then consider the following options in the order they appear below to minimise risks, so far as is reasonably practicable:

- substituting the hazard for something safer e.g. have patrons in closed carriages rather than open carriages from which they could fall
- isolate the hazard from people e.g. provide a secure barrier around an amusement device to prevent unauthorised entry or provide viewing areas away from rides, and
- use engineering controls e.g. provide walkways, guards, padding or restraints.

If after implementing the above control measures a risk still remains, consider the following controls in the order below to minimise the remaining risk, so far as is reasonably practicable:

- use administrative controls e.g. warning signs for patrons about size or height restrictions and safe use of the device, or rotating shift times for operators to reduce fatigue, and
- use personal protective equipment (PPE) e.g. ear plugs or muffs if noise levels are above the exposure standard, protective clothing and sunscreen to protect workers against sun exposure or protective clothing for patrons if required.

A combination of the controls set out above may be used if a single control is not enough to minimise the risks.

You need to consider all possible control measures and make a decision about which are reasonably practicable for your workplace. Deciding what is reasonably practicable includes the availability and suitability of control measures, with a preference for using substitution, isolation or engineering controls to minimise risks before using administrative controls or PPE. Cost may also be relevant but you can only consider this after all other factors have been taken into account.

#4 Review control measures

4. **Check your control measures** regularly to ensure they are working as planned. Control measures need to be regularly reviewed to make sure they remain effective taking into consideration any changes, the nature and duration of work and that the system is working as planned.

Further information on the risk management process is in the Code of Practice: *How to manage work health and safety risks.*

More information on managing the risks of plant is in the Code of Practice: *Managing risks of plant in the workplace.*

Who is involved?

You must consult your workers and their health and safety representatives (if any) when deciding how to manage the risks associated with using amusement devices in the workplace.

If there is more than one business or undertaking involved at your workplace you must consult them to share information, find out who is doing what and work together so risks are eliminated or minimised so far as is reasonably practicable. For example, amusement device owners and operators at festivals or agricultural shows should consult with the event organisers about local factors such as land stability and underground or overhead services which may affect the safety of amusement devices.

If you have hired or leased an amusement device you should consult the person who owns it about potential hazards because you both have responsibility for ensuring it is safe and without risk to health and safety.

Further information on consultation requirements is in the Code of Practice: *Work health and safety consultation, co-operation and co-ordination*.

BEFORE USING AN AMUSEMENT DEVICE

Before using an amusement device in the workplace you must:

- register the amusement device if required by Schedule 5 of the WHS Regulations
- prepare and maintain an emergency plan
- ensure the amusement device is suitable for the intended purpose and is in a safe condition
- provide workers with instruction and training in the proper operation of the amusement device, and
- so far as is reasonably practicable, identify and manage any risks related to the site where the amusement device will be operated.

Depending on the device and the worker's role, instruction and training on the 'proper operation' of an amusement device to protect workers, patrons and others may include:

- safe start up, operation and shutdown in accordance with the manufacturer's instructions
- safe device control including safe speed, noise levels and emergency controls
- safe access for, placement, management and security of patrons
- providing safety instructions to patrons, and
- safe exit from the amusement device.

You should also prepare and follow safe work procedures for transport, installation, commissioning, operation, inspections, maintenance and storage of amusement devices.

For more information see the *Amusement devices information sheet for owners and managers*.

Choosing an Amusement device

Before buying or hiring an amusement device think about what it will be used for and discuss your needs with suppliers to decide which amusement device is suitable for the intended use. Ask the supplier about what it was designed and manufactured to do and the results of any tests and conditions needed to use it safely. You should also check the design and construction is suitable for the intended purpose and that it meets any relevant technical standards.

Complex amusement devices should be inspected by a competent person, for example an engineer, before they are bought or hired. They can also provide helpful advice and assess information provided by the supplier.

Second-hand amusement devices

A second-hand amusement device is more likely to have out-dated or missing safety features. Suppliers of a second-hand amusement device must do what is reasonably practicable to supply equipment that is safe to use and as far as is reasonably practicable, identify any faults. Suppliers must provide the buyer with written notice of the condition of the plant, any faults identified and if appropriate, that the plant should not be used until faults are rectified.

Further information on second hand plant is in the Code of Practice: *Managing the risks of plant at the workplace* and the *Information Sheet: Plant designers, manufacturers, importers and suppliers*.

Hiring an amusement device

If hiring or leasing an amusement device the person hiring the device and the person it was hired from must ensure, so far as is reasonably practicable, it is safe to use.

If you are hiring an amusement device to another person you should check:

- it has been inspected and maintained between each hire
- there has been regular testing to check for new or increased risks to health and safety and if more frequent testing is required
- test results are recorded in the log book
- the log book and maintenance manual are updated in line with the manufacturer's instructions each time it is hired, leased, erected, installed, dismantled or removed
- if it is for long term hire, that arrangements are in place for inspections and maintenance to occur as required
- if the customer is to be responsible for inspections and maintenance, appropriate instructions are provided
- the customer has information if required about how to set up and dismantle the amusement device safely, and
- the customer has the manufacturer's instructions or instructions prepared by a competent person about how to use the amusement device—a competent person is a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.

If you are hiring an amusement device you should check:

- it is suitable for its intended use
- the inspections and maintenance records are up-to-date in the log book
- the supplier has public liability insurance, and
- the supplier provides information about its registration, proper use, transporting, handling, setting-up inspection, routine maintenance and dismantling.

Registering an amusement device

You must not allow a registrable amusement device or passenger ropeway to be used unless it has been registered with the regulator. For more information see the Code of Practice: *Managing the risks of plant in the workplace.*

Schedule 5 of the WHS Regulations requires that:

- passenger ropeways be design registered (they do not require item registration), and
- amusement devices covered by Section 2.1 of AS 3533.1-2009 *Amusement rides and devices - Design and construction* be design and item registered with the exception of the following:
  - class 1 devices
  - playground devices
  - water slides where water facilitates patrons to slide easily, predominantly under gravity, along a static structure
  - wave generators where patrons do not come into contact with the parts of machinery used for generating water waves, and
  - inflatable devices, other than inflatable devices (continuously blown) with a platform height of 3 metres or more.

    Note: *Inflatable device (continuously blown)* means an amusement device that is an inflatable device that relies on a continuous supply of air pressure to maintain its shape, and

    Platform height means in relation to an inflatable device (continuously blown), the height of the highest part of the device designed to support persons using it (the platform), as measured from the surface supporting the device to the top surface of the platform when the device is inflated but unloaded.

Examples of amusement devices that must be registered include:

- most powered and non-powered (manually operated) mechanical devices
- inflatable devices (continuously blown) with a platform height of 3 metres or more
- climbing walls
- giant slides
- go-karts
- high ropes courses, bridge swinging, bungy jumping, and
- miniature trains not owned and operated by a model railway society, club or association.

If you are not sure if an amusement device needs to be design or item registered you should contact the regulator.

Site conditions

Amusement devices can be set up and operated in a range of locations. The site conditions at each location should be considered including:

- ground and supporting surfaces
  - firm ground that can support the weight of the loaded device and any plant used to erect or maintain it e.g. forklifts
  - temporary foundations or footings that can carry applied loads
  - site drainage and the potential impact from rain
  - ground that is suitable to hold anchors in place for inflatable devices
- weather conditions e.g. high winds
- vertical and horizontal clearance between the amusement device and buildings, trees, overhead electric lines, underground services, vehicle and pedestrian pathways and other amusement devices, and
- safe access for workers, patrons and emergency vehicles.

Installing an amusement device

Amusement devices must be installed and operated in accordance with the manufacturer's instructions. If this information is not available they should be installed using instructions provided by a competent person.

When installing or erecting an amusement device you should check that:

- parts are properly aligned and not bent or distorted
- parts that are worn or damaged beyond specified discard criteria or limits are not used
- parts requiring lubrication are lubricated regularly
- any necessary fastening and locking device is installed and properly secured
- makeshift apparatus is not used e.g. temporary structural supports
- artificial lighting is installed where necessary for worker or patron health and safety
- health and safety equipment is kept in good working order and free from obvious defects
- welding is not conducted on load-bearing parts unless by a competent person and the part is not compromised by the welding
- where split pins or taper pins are used in floating spindles, washers are fitted between the pins and adjacent rubbing surfaces
- the correct pins, bolts and other connectors are used as specified by the manufacturer or a competent person, and
- protective padding is placed over sharp edges.

High risk work licences

There is no high risk work licence requirement for amusement device operation.

However, a high risk work licence is required to operate certain types of plant that may be used in erecting or dismantling an amusement device, including forklift trucks, boom type elevating work platforms and certain cranes. A high risk work licence is also required to carry out dogging, rigging or scaffolding work, including dismantling of scaffolding.

If your workers undertake any of this work they must hold the relevant licence.

Commissioning an amusement device

Commissioning involves adjusting, testing and inspecting an amusement device according to the designer's or manufacturer's specifications. If you do not have this information you should use instructions provided by a competent person.

Safety checks should be completed before an amusement device is put into service including checking any of the following that apply to the specific amusement device:

- the amusement device is soundly constructed and free from obvious defects
- the amusement device is capable of supporting the maximum load it may be subjected to and of moving safely at the speeds it is designed for
- control devices, speed-limiting devices, brakes or other equipment are provided so the amusement device operates safely
- that the restraint system prevents accidental release or release by the passenger
- passenger safety will be maintained if the amusement device or power fails where patrons are normally held in position by dynamic forces
- the amusement device has an emergency braking system to prevent collisions
- any parts of the amusement device patrons may touch are smooth, free from sharp, rough or splintered edges and corners and have no protruding parts e.g. studs, bolts, or screws
- amusement devices operated on tracks are provided with an anti-rollback device which is automatically activated if the propelling mechanism fails

- inflatable amusement devices have sufficient anchor points
- out-of-balance testing is carried out on amusement devices that include a degree of out-of-balance loading—check there is no adverse vibration, harmonic oscillation or movement relative to footings and foundations
- the integrity of hydraulic and pneumatic systems and their components is tested regularly, safety systems and evacuation procedures are tested regularly, and
- electrical testing with reference to relevant technical standards is carried out regularly.

Information, training, instruction and supervision

Before an amusement device is used workers must be provided with the information, training, instruction or supervision necessary to protect themselves, patrons and others. Amusement device workers include operators who control and operate amusement devices, attendants working under the supervision of the operator and who assist and guide patrons, maintenance personnel and competent persons carrying out inspections and testing.

Operators and attendants should be supervised by a competent person until they can competently and safely use the amusement device and should also be provided with regular refresher training. Adequate supervision must be provided to ensure the health and safety of workers.

Training programs should be 'hands on' and take into account the needs of workers, for example their literacy levels, experience and the specific skills required for the safe use of amusement devices.

Health and safety information must be provided to anyone installing, commissioning, testing, decommissioning, dismantling or disposing of the amusement device. This should include information on the types of risks the amusement device may pose to them during these activities.

Emergency plan

An emergency plan must be prepared and maintained for the workplace. The plan's procedures should be communicated to workers and as necessary to patrons.

Procedures for responding effectively in emergencies should include, where applicable:

- a system for contacting emergency services quickly
- warning systems and evacuation procedures
- emergency contact numbers displayed where they are easily read
- firefighting and rescue equipment available on the site
- emergency stop systems and safe shut-down procedures for amusement devices
- training workers in using emergency equipment to release patrons from the amusement device in an emergency, and
- training workers to respond to injured people.

Where amusement devices operate in enclosed spaces, emergency lighting and illuminated exit signs should be installed.

For further information see the:

- Fact Sheet: *Emergency plans*, and
- Code of Practice: *Managing the work environment and facilities*.

OPERATING AMUSEMENT DEVICES

The operator

The amusement device operator must be provided with instruction and training so they are competent to operate the device safely. The operator of an amusement device should:

- be able to demonstrate they understand and will follow operating procedures
- be able to give clear instructions or warnings to patrons and attendants and check patrons are safely restrained
- immediately report faults or malfunctions and stop the amusement device, and
- be familiar with emergency and first aid procedures.

Information and training of operators should cover how to operate the amusement device safely including:

- following manufacturer or other written operating instructions
- general use of controls including emergency braking
- speed limits, loads, ride times and frequencies
- operator distractions including restrictions on the use of mobile phones
- safe loading and unloading
- passenger restrictions e.g. height and weight
- procedures to manage patrons who misbehave
- safe waiting and viewing places for spectators
- use and maintenance of safety equipment
- inspection, testing and maintenance procedures
- local environmental conditions e.g. what to do in adverse weather
- location considerations like safe public viewing areas
- emergency training including procedures during equipment failure, and
- using, testing and storing PPE during emergencies.

For more information see the *Amusement devices information sheet for operators*.

Prior to daily operation

You must visually check the amusement device before operation. You must also check the amusement device running under power without passengers and record these daily checks in the log book for the device.

Public safety

You should work closely with any event organisers to ensure public safety whenever the amusement device is used during a public event. The risk to unauthorised people entering the area of the amusement device should be controlled, for example by dedicated fencing. Any perimeter fencing should be checked and maintained to prevent unauthorised access.

If amusement devices still pose risks, locks should be fitted to prevent unauthorised access. Securing an amusement device should not limit emergency access or the ability of people to evacuate if necessary. Barriers or locks should be regularly inspected and tested.

Table 2 Permanent and temporary barriers

Permanent barriers	Temporary barriers
Should: ■ be at least 1 metre higher than adjacent surfaces ■ define the zone ■ be constructed from suitable materials ■ prevent people from climbing or moving through or under them ■ be stable and able to withstand anticipated loads, and ■ be secured by installing gates and joints so there is no weak point for entry.	Should: ■ be at least 900 mm high ■ be easily identifiable e.g. a distinctive colour, and ■ have signs marked "**NO ACCESS**" in lettering 75 mm or bigger.

The security of unattended amusement devices should also be managed, for example by:

- locking electrical switchboards
- securing fuels or hazardous chemicals in accordance with regulatory requirements
- locking access to operator controls and store keys securely, and
- keeping other plant and equipment safely stored.

Access - entry and exit

Amusement devices should have crowd control fences, barriers or other physical measures to:

- assist safe and orderly queuing
- define the safe loading and unloading area
- provide safe passage for operating staff and patrons, and
- exclude unauthorised people including spectators and passers-by from accessing the amusement device and staff and patron areas.

Access ways for patrons boarding or disembarking from amusement devices should be clearly defined, illuminated where necessary and free of trip and fall hazards. Passenger loading and unloading platforms and similar facilities should be kept clear of debris, obstructions and slippery conditions.

Gates providing access during maintenance, assembly or inspection should be secured to prevent access while the amusement device is operating.

Entry to operating amusement devices should be by a gate latched from the inside unless entry is supervised and defined by a barrier, drop-bar, chain or similar method. If the entry is unsupervised consider using an interlock to the amusement device controls. Barriers should be kept in a good condition.

Clearly marked exits should be provided for patrons including those used for emergency evacuation. Where ambient light is low exit signs should be illuminated. Exit points should be fitted with a gate to secure against entry from outside but to provide an obvious means of opening in the exit mode.

In the event of a power failure, malfunction, fire or unplanned stoppage the amusement device should have facilities to bring the amusement device to a position where patrons can disembark or have fixed walkways, stairs, platforms or hatchways that are readily accessible. Where this is not practicable the emergency plan should include provision to rescue the patrons.

Patron restraint and containment

Where there is a risk that patrons could fall or be ejected from an amusement device, even due to unexpected behaviour like panicking, the risk should be minimised. Control measures can include:

- enclosing patrons in a carriage or providing a restraint system to ensure they remain seated
- containing and keeping patrons separated from moving parts of the device
- using unlocking mechanisms that cannot be accessed by the patron e.g. by having a centrally controlled interlock mechanism for the operator to disengage the restraint system
- remote emergency release measures for amusement devices passing through an enclosed space
- having screening procedures for patrons to ensure only those who can be effectively restrained are allowed to ride e.g. screening out children who are too small or adults too large to be restrained, and
- checking patrons are secured before the amusement device starts.

Patron responsibility

Many incidents can result from unsafe patron behaviours. To minimise risks it is necessary:

- that the operator communicates health and safety information to patrons and enforces health and safety requirements
- patrons understand the information and comply with instructions provided including with any height restrictions, and
- operators monitor patron behaviour and take appropriate action if instructions are not being complied with e.g. from a friendly reminder to stopping the amusement device depending on the potential consequence.

Table 3 Examples of hazardous patron behaviour

Hazardous patron behaviour	
All patrons	■ ignoring signposted health and safety restrictions e.g. height and weight limitations or pre-existing medical conditions ■ reaching hands or feet outside the amusement device ■ standing up while on an amusement device ■ not using seat belts or other safety equipment as instructed ■ overloading an amusement device ■ horseplay ■ not paying attention ■ turning or twisting head or body on a high velocity amusement device ■ riding while tired, dehydrated or intoxicated
Young children	■ getting off an amusement device prematurely due to confusion, excitement or fear ■ putting hands or feet into the amusement device ■ running or jumping while getting on or off amusement devices

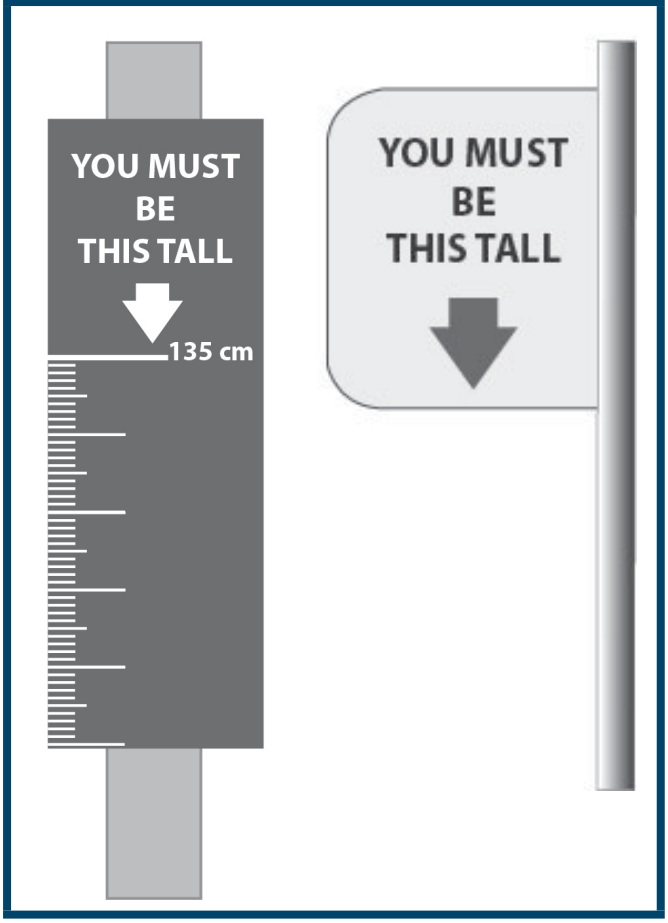
Signs

You should display information on the possible effects the use of an amusement device may have on patrons. Operators should also provide verbal instructions.

Information should be clearly displayed for patrons indicating the known risks in participating in or on an amusement device and by their participation, they accept those risks. Signs encouraging patrons to act in a responsible manner should be displayed.

FIGURE 1 Example of an amusement device safety sign

FIGURE 2 Examples of height guides for amusement devices



Signs should outline patrons have a duty to:

- refrain from behaviour which could affect theirs and others' health and safety or which may damage the amusement device
- obey verbal and reasonable written instructions and warnings given by the proprietors or operators of an amusement device, and
- use the safety equipment provided whenever participating in an amusement device.

Noise levels

Operators and patrons may be exposed to hazardous noise from the operation of amusement devices or localised entertainment. Noise that a worker is exposed to must not exceed the exposure standard for noise. Where workers may be exposed to noise for long durations (e.g. over 8 hours) noise levels should be lower than the noise exposure standard if reasonably practicable.

If workers may be exposed to noise in excess of the exposure standard the noise level should be reduced, or where this is not reasonably practicable, other risk control measures should be implemented like appropriate PPE.

Further information on managing noise is in the Code of Practice: *Managing noise and preventing hearing loss at work.*

Electrical safety

Information about electrical safety including working near electricity and electric lines and use of electrical devices is in the Code of Practice: *Managing electrical risks in the workplace.*

Internal combustion generators

If an internal combustion generator is used to generate power risk controls should include:

- locating the generator in an area with sufficient fresh air or venting exhaust gas to an open area and away from people
- providing a fire extinguisher near the generator
- restricting access to hazardous areas of the generator, and
- using measures to minimise noise levels e.g. solid walls enclosing the generator.

Other control measures

Guarding

A guard is a barrier which stops a person touching hot, cold or moving parts or accessing dangerous areas of an amusement device. Guarding should be installed so clothing or body parts cannot get caught and patrons are not injured.

Operator controls

Operator controls should be guarded and located where they cannot be activated unintentionally or by patrons.

Emergency stops

Emergency stop controls should not be the only method of bringing an amusement device to a stop. They should be designed as a backup to other control measures.

Warning devices

Warning devices should be used in addition to other control measures. Warning devices can indicate that the device is starting or stopping.

Further information on guarding, operator controls, emergency stops, warning devices and isolation procedures is in the Code of Practice: *Managing the risks of plant in the workplace*.

Inflatable amusement devices

Information on potential hazards of inflatable amusement devices and practical advice on ways you can control the risks associated with them is in the *Amusement devices information sheet for Inflatable devices*.

INSPECTION, MAINTENANCE, REPAIR AND STORAGE OF AMUSEMENT DEVICES

Inspections

An amusement device must be maintained, inspected and tested by a competent person according to the manufacturer's instructions or instructions prepared by a competent person.

Safety inspections should include checking the control mechanisms, speed limiting apparatus, brakes, electrical systems, fastenings and other safety equipment including barriers.

To protect the health and safety of the person conducting the inspection you should:

- de-energise the amusement device
- switch off or isolate the power source to stop the amusement device from accidentally powering dangerous parts during inspection
- dissipate or isolate stored energy e.g. release or contain stored hydraulic pressure to stop the amusement device moving or collapsing unexpectedly, and
- ensure guards removed during inspections are correctly replaced before the amusement device or part of the amusement device is operated.

Daily inspection

You must make:

- a daily visual check before operating the amusement device, and
- another check with the amusement device running under power before it is accessed by members of the public.

These daily checks must be entered into the log book with the:

- date and time of the inspection or test
- name of the person who performed the check, and
- information about defects or problems identified and steps taken to fix them.

Annual inspection

A competent person must complete a detailed inspection of an amusement device at least every 12 months. This inspection may be according to an equivalent WHS law in your jurisdiction.

A *competent person* for the annual inspection of an amusement device means a person who:

- in the case of an inflatable device (continuously blown) with a platform height less than 9 metres, has acquired through training, qualification or experience the knowledge and skills to inspect the plant, or
- in the case of any other amusement device or passenger ropeway:
  - has acquired through training qualification or experience the knowledge and skills to inspect the plant, and
  - is registered under a law that provides for the registration of professional engineers, or
- in the case of any amusement device or a passenger ropeway is determined by the regulator to be a competent person.

The annual inspection must include:

- a check of the operational history of the amusement device or passenger ropeway since the last detailed inspection
- a check of the log book for the amusement device
- a check that maintenance and inspections of the amusement device have been carried out as required under the WHS Regulations
- a check that required tests have been carried out and records have been maintained, and
- a detailed inspection of the amusement device or passenger ropeway to ensure compliance with the WHS Act and Regulations including a specific inspection of critical components.

The annual inspection should include checking operating history, technical standards and maintenance manuals for the amusement device and observing the amusement device in its various configurations including packed for transport, partly erected, fully assembled and when operating. This may mean the inspection takes place over a period of time.

The inspection should check:

- the condition of structural and mechanical components e.g. seating, patron-restraint devices, brake systems, frames and motors
- the condition of electrical and electronic components e.g. cabling and connections
- disassembly of critical components of the amusement device and removal of grease and corrosion to allow a complete and thorough inspection
- tolerance checking of critical components, and
- that non-destructive testing of critical areas for evidence of cracking, fatigue and excessive stress has been undertaken if specified in maintenance instructions and any identified defects have been rectified.

Note: Non-destructive testing means using technical methods to examine materials or components in ways that do not impair their future usefulness and serviceability. This is done to find, measure and evaluate flaws, to assess integrity, properties and composition and to measure geometrical characteristics.

If an amusement device requires an electrical installation inspection you must ensure a competent person does this. This means a person who is qualified to inspect electrical installations. A competent person should provide a signed statement which is recorded in the log book indicating the electrical installation is safe to use and operate.

An annual inspection report should be prepared by a competent person and the inspection recorded in the log book. An example template showing what should be recorded is available in the *Amusement devices information sheet for annual inspection and records*.

The annual inspection record, report and the results of any tests carried out at the time should be kept together with the log book.

Maintenance, repair and cleaning

The amusement device must be maintained and inspected by a competent person in accordance with the designer's or manufacturer's instructions or a maintenance manual prepared by a competent person.

If an amusement device needs to be operated for maintenance or cleaning the operator controls must:

- allow operation during maintenance or cleaning
- not be able to be operated by anyone except the people carrying out maintenance or cleaning, and
- allow operation in a way that the risks when maintaining or cleaning the amusement device are eliminated or minimised, so far as is reasonably practicable.

You should check that any guards are replaced following maintenance and cleaning. If possible this should be done while the device is not operating.

An amusement device identified as damaged should be withdrawn from service until the risks relating to health and safety have been assessed and controlled.

Record keeping

You must keep a record of all tests, inspections, maintenance, commissioning, decommissioning, dismantling and alteration of the amusement device for the period it is used or until you relinquish control of it. You must make this record available to the person you relinquish control of the device to.

Log book

A log book must be kept with the amusement device. It must include details of the erection or storage of the device including the date of any erection. You must also accurately record the daily checks of the device operated without passengers in the log book.

Note: Log books are not required for passenger ropeways.

The log book is used to keep permanent records about repairing, maintaining and using the amusement device including copies of any inspection reports. It may be kept as a booklet, a loose-leaf folder or electronically on a computer.

Log books will vary depending on the complexity and number of amusement devices owned and operated. If needed, separate logs should be kept for other equipment e.g. steam, hydraulic and pneumatic systems which are not able to be covered by the general log.

A log book and operating and maintenance manual must be kept for each amusement device and must be easily accessible to people who need them including people involved with installing, erecting, commissioning, using, testing, decommissioning, dismantling, storing and disposing of the amusement device.

The log book must be kept with the amusement device. For travelling amusement devices or those hired out where there is a danger of the log book being damaged or lost, a copy of the log book entries for at least the last 2 years should be kept with the device, provided the entire log book can be produced within 48 hours and is produced for examination as part of the annual inspection.

Other information that can be recorded in the log book includes:

- the amusement device and classification under AS 3533.1-2009 *Amusement rides and devices - design and construction*
- plant design registration information
- plant item registration number
- the date, time, comments and who performed the daily inspection and operation without passengers
- the annual inspection record including:
  - the date when the annual inspection was carried out
  - the name, address, telephone number and qualifications or status of the person carrying out the inspection
  - information verifying the steps taken to comply with the requirements of the inspection program including specific information about the inspection of the critical components of the amusement device and the certificate of inspection
  - information about defects or problems found during the inspection program and the steps taken to fix or address them
  - information about maintenance, repair work or modifications carried out on the amusement device
- maintenance and repair records including:
  - the name, address, telephone number and qualifications of the repairer
  - details about the repair including information concerning the nature of any damage
- details of any modifications (or alterations for registered plant) made to the amusement device including:
  - the date on which it is carried out
  - the name, address and telephone number of the person who made the modifications
  - the qualifications or status of the person
  - specific details of the modification or alteration
- relevant information and data from commissioning
- results of hazard identification and risk assessments carried out on the amusement device
- manufacturer's specifications
- a copy of the set up and dismantling procedures
- a copy of operating instructions
- information, instruction and training provided to workers and the competencies of operators, and
- copies of any improvement or prohibition notices issued in the last twelve months.

If final and approved design drawings and calculations are available, keeping them with the log book will assist with testing and inspection.

Decommissioning and dismantling an amusement device

Dismantling should be performed according to the designer's or manufacturer's instructions.

Storing an amusement device

An amusement device not in use must be stored so it does not create a risk to people in the workplace. You should provide the health and safety information supplied by the designer or manufacturer to the person who is dismantling or storing the amusement device and take steps to prevent damage e.g. from corrosion.

You must ensure that the person who stores the device is a competent person or is under the supervision of a competent person.

After an extended period of storage a risk assessment and any maintenance or repairs identified as necessary to control identified risks should be completed before erecting, using, installing or commissioning the amusement device.

Modifying an amusement device

Before modifying an amusement device you should consult with the designer or manufacturer to ensure relevant safety issues have been considered. If the original designer or manufacturer cannot be contacted, modifications should be designed and carried out by a competent person(s) based on relevant technical standards. Changes you make to the amusement device may mean you take on designer or manufacturer duties.

If the amusement device is design registered a modification may be an alteration and an altered design registration could be required. If new risk control measures are required you must:

- register an altered plant design, and
- apply to alter the item registration to include the new design registration number.

If you are unsure of the requirements about this you should check with the regulator.

Details of modifications made to an amusement device should be recorded in the log book.

Before returning a modified amusement device to service you should:

- have control measures in place to eliminate or minimise any risks created by the changes, and
- inspect and test the amusement device with regard to the modified design specifications, relevant technical standards and engineering principles.

Further information

The following list of published technical standards provides guidance only and compliance with them does not guarantee compliance with the WHS Act and Regulations. This list is not exhaustive.

Australian Standards

- ASNZS 3002:2008: *Electrical installations for shows and carnivals*
- AS 3533.1-2009: *Design and construction*
- AS 3533.1-2009/Amdt 1-2011: *Design and construction*
- AS 3533.2-2009: *Operation and maintenance*
- AS 3533.2-2009/Amdt 1-2011: *Operation and maintenance*
- AS 3533.3-2003: *In-service inspection*
- AS 3533.4.1-2005: *Land-borne inflatable devices*
- AS 3533.4.1-2005/Amdt 1-2007: *Land-borne inflatable devices*
- AS 3533.4.3-2007: *Roller coasters*
- AS 3533.4.4-2011: *Concession go-karts*
- AS 3533.4.5(Int)-2012: *Waterborne inflatables*

AMENDMENTS TABLE

Date	Page Number	Amendments
8 December 2014	Document Footers	Publication date changed from first published date of July 2014 to republished date of December 2014.
8 December 2014	4	Wording in the 'Before using an amusement device' section has been revised. Previous wording was: Before using an amusement device in the workplace you should: ■ ensure the amusement device is suitable for the intended purpose and is in a safe condition ■ register the amusement device if required by the WHS Regulations ■ identify and manage any risks related to the site where the amusement device will be operated ■ prepare and follow safe work procedures for transport, installation, commissioning, operation, inspections, maintenance and storage of amusement devices ■ provide workers with the information, training, instruction or supervision necessary to protect themselves, patrons and others, and ■ prepare and maintain an emergency plan. The revised wording is: Before using an amusement device in the workplace you must: ■ register the amusement device if required by Schedule 5 of the WHS Regulations ■ prepare and maintain an emergency plan ■ ensure the amusement device is suitable for the intended purpose and is in a safe condition ■ provide workers with instruction and training in the proper operation of the amusement device, and ■ so far as is reasonably practicable, identify and manage any risks related to the site where the amusement device will be operated. Depending on the device and the worker's role, instruction and training on the 'proper operation' of an amusement device to protect workers, patrons and others may include: ■ safe start-up, operation and shutdown in accordance with the manufacturer's instructions ■ safe device control including safe speed, noise levels and emergency controls ■ safe access for, placement, management and security of patrons ■ providing safety instructions to patrons, and ■ safe exit from the amusement device. You should also prepare and follow safe work procedures for transport, installation, commissioning, operation, inspections, maintenance and storage of amusement devices.