

Our Ref: APPARSA-2020-01

Electrical and Mechanical Engineering Group

15 June 2020

Attn: All Amusement Rides Operators, Ride Managers, and Specialist Professional Engineers in Amusement Rides Engineering

Dear Sir/Madam

AMUSEMENT RIDES SAFETY (AMENDMENT) REGULATIONS 2020

We wish to inform you that the Amusement Rides Safety (Amendment) Regulations 2020 (the "Amendment Regulations"), which was gazetted on 15 June 2020, will come into operation on 1 January 2021 (with the exception of two amendments in Regulation 18 which will come into operation on 15 June 2021).

2. This circular has three parts, namely (i) Part A that lists the main changes that affect all types of amusement rides regulated under the ARS Act; (ii) Part B that lists the main changes that affect specific types of amusement rides currently regulated under the ARS Act; and (iii) Part C that lists new types of amusement rides to be subject to the regulation of the Amusement Rides Safety ("ARS") Act.

Part A – Provisions that affect all types of amusement rides

3. The main changes which will affect all types of amusement rides are as follows:

(a) Changing applicable codes to European Committee for Standardization codes (Regulation 2)

With effect from 1 January 2021, all British Standard codes that are currently used will no longer be applicable for amusement rides regulated under the ARS Act. Instead, the European Committee for Standardization codes will be applicable.

(b) Renewal of Operating Permit (OP) with a validity period shorter than 12 months due to expiry of insurance and/or certificate of compliance (Regulation 14)

Currently, every OP application must be accompanied by an insurance certificate (in respect of an insurance policy mentioned in Section 14(3)(e) of the ARS Act) and a certificate of compliance ("COC") from the Singapore Civil Defence Force (SCDF). With effect from 1 January 2021, the expiry date of the OP granted will be aligned to the expiry date of the insurance certificate or that of the COC, whichever is earlier.

If the validity period of an OP granted is shorter than 12 months due to the early expiration of the insurance certificate or of the COC, the operator may apply for a renewal of the present OP for a period of up to 12 months (counted from the start of the present OP). A new insurance certificate and/or COC whose expiry date is the same or beyond the 12-month period is required for the renewal. No certification from a Qualified Person is required and no application fee is payable for such renewal application.

(c) Monitoring of Ride Operation by Electronic Visual Monitoring System (Regulation 16)

With effect from 1 January 2021, the operation of all amusement rides will need to be monitored by a electronic visual monitoring system such as closed-circuit televisions (CCTV) at each location that the Commissioner may direct. The recordings of such system must be retained for at least 14 days.

Part B – Provisions that affect specific types of existing amusement rides

4. The main changes which will affect specific types of existing amusement rides are as follows:

(a) Air-inflated enclosure (Regulation 2)

The definition of air-inflated enclosure has been amended to clarify that it includes those enclosures which contain openings, so long as the patron(s) are wholly enclosed within it so that no part of the patron(s) is/are outside of the air-inflated enclosure when it is in use. For example, a human hamster ball will be defined as an air-inflated enclosure while bubble soccer is not an air-inflated enclosure.

(b) Go-karts (Regulation 18)

For operators of go-karts, they are required to ensure that every existing vehicle used in the go-karts is installed with a restraint device and a rollover protection device by 15 June 2021.

In addition, with effect from 1 January 2021, the operators must ensure that patrons wear full-face protective helmets, store loose clothing or accessories securely, and cover their hair (if shoulder length or more) with a hair net before driving a vehicle. In addition, only the vehicles specified in the operating permit for the go-karts are allowed to be operated as part of the amusement ride. Details of these requirements are found in the **Annex**.

(c) Bungee device or reverse bungee device (Regulation 19)

Amendments are made to clarify that “tandem jumping” is allowed, although not more than one patron at a time can be attached to a single bungee cord. In addition, for bungee and reverse bungee devices using bungee cords (whether of one or more types), a specimen of each type of bungee cords must be subject to a cycle frequency test.

(d) Bumper cars (Regulation 19E)

The operator of bumper cars must ensure that only the vehicles specified in the operating permit for the bumper cars are allowed to be operated as part of the amusement ride.

(e) Inflatable (Regulation 19F)

With effect from 1 January 2021, the operator of an inflatable must ensure that, if the inflatable is used on water (whether floating on, partially submerged within or fully submerged within the water) —

- (i) there is a sufficient number of life-guards (who are properly trained and certified by an organisation acceptable to the Commissioner) to rescue any patron of the inflatable when the necessity arises; and

- (ii) all equipment necessary to conduct the rescue (such as scissors and floatation devices) are available for use onsite.
- (f) Second Schedule (List of devices included in the regime)
Additionally, Paragraph 6 of the Second Schedule is amended to include a group of inflatables, with different criteria for inflatables used on land and water. The full requirements are described in the **Annex**.
- (g) Third Schedule (List of devices that are excluded from the regime)
Paragraph 2 of the Third Schedule is amended such that go-karts, bumper cars, mechanical simulators and roller gliders that are power-driven are not excluded from the regime even if they have a total motive power rating of not more than 1.1 kilowatts.
- (h) Fourth Schedule (List of major amusement rides)
Existing rides such as flume ride, river rafting ride, roller coaster and train will be included as major amusement rides where the maximum vertical displacement a patron is taken through in the course of ride is equal to or exceeds 10 metres.

Part C – Provisions for new types of amusement rides

5. There is a total of five new types of amusement rides prescribed in the Regulations, as listed below. The definition of each amusement ride, criteria for inclusion into the regime, criteria to be listed as major amusement ride, as well as details on the requirements for the operator of each of them can be found in the **Annex**.

- (a) Free-fall jump device
- (b) Funicular
- (c) Mechanical simulator (e.g. mechanical bull, surf simulator)
- (d) Play net
- (e) Roller glider

6. Below table shows the necessary permits required for amusement rides falling into the above 5 types, depending on whether they are existing rides:

Installed before 1 January 2021	Installed on or after 1 January 2021
<ul style="list-style-type: none"> • Does not require an installation permit. • Require an operating permit to continue to operate after 1 January 2021. 	<ul style="list-style-type: none"> • Require an installation permit before installing the amusement ride • Require an operating permit before operating the amusement ride.

For further information and clarification

7. The updated Regulations and the Amusement Rides Safety (Amendment) Regulations 2020 are available for viewing at our website:

<https://www1.bca.gov.sg/regulatory-info/amusement-rides/amusement-rides-legislation>

8. For clarification, please submit your enquiry through BCA’s Online Feedback Form at <https://www.bca.gov.sg/feedbackform/> or call us at 1800 342 5222.



Yours faithfully



TEO ORH HAI
GROUP DIRECTOR
ELECTRICAL AND MECHANICAL ENGINEERING GROUP
for COMMISSIONER OF AMUSEMENT RIDES SAFETY

ANNEX

Further Duties for Operator of Go-karts (Amendments to Regulation 18)	
Additional Requirements for Go-Karts Operators	Operator of go-karts must ensure that – (i) a restraint device is installed for each seat in each vehicle used in the go-karts and the restraint device for each patron is properly fastened or secured before the vehicle is driven (by 15 June 2021); (ii) a rollover protection device is installed on each vehicle used in the go-karts (by 15 June 2021); (iii) each vehicle used in the go-karts is not driven unless — (I) each patron wears a full-face protective helmet securely on the patron's head; (II) any loose clothing worn or accessory carried by each patron is stored securely; and (III) where the length of a patron's hair (whether tied or untied) is below the patron's shoulders — the patron's hair is covered with a hair net (iv) only the vehicles specified in the operating permit for the go-karts are operated as part of the amusement ride.

Amended Inclusion Schedule for Inflatable (The Second Schedule)	
Revised Regulatory Scope for Inflatables	An inflatable or a group of inflatables that a patron may enter upon or within or climb on — (i) in a case where the inflatable or group of inflatables is used on land — <ul style="list-style-type: none">• that has any space that is fully or partially roofed over or covered, and the total roofed over or covered space occupies an area that is at least 30 square metres;• where the maximum vertical displacement above the ground of a patron using the inflatable or group of inflatables is at least 5 metres;

	<ul style="list-style-type: none"> • that has any space within the inflatable or group of inflatables that is fully or partially roofed over or covered, and that has at least one point within that space, accessible by a patron, where the distance to the nearest exit is at least 15 metres; or • that has a total base area (when viewed vertically above) that is at least 150 square metres, whether or not the inflatable or group of inflatables has any enclosed space; or <p>(ii) in a case where the inflatable or group of inflatables is used on water (whether floating on, partially submerged within or fully submerged within the water) —</p> <ul style="list-style-type: none"> • where the maximum vertical displacement of a patron using the inflatable or group of inflatables above the base of the inflatable or group of inflatables is at least 5 metres; • that has a total base area (when viewed vertically above) that is at least 15 square metres, whether or not the inflatable or group of inflatables has any enclosed space; or • that has any linear dimension (when viewed vertically above) that is at least 7 metres
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Further Regulation Provisions for New Types of Amusement Rides	
Free-fall Device	<p style="text-align: center;">Jump</p> <p><u>Definition (Regulation 2)</u> A device (other than a diving tower) consisting of —</p> <ul style="list-style-type: none"> (i) a catch device that is designed to break the fall of a patron; and (ii) a structure that allows one or more patrons to jump off or be released from the structure and free-fall onto the catch device <p><u>Operator's further duties (Regulation 19B)</u> The operator of a free-fall jump device must —</p> <ul style="list-style-type: none"> (i) ensure that the catch device used for the free-fall jump device has a suitable landing area, position and cushioning to safely slow down and stop the fall of the patron; (ii) ensure that the use of the free-fall jump device is at all times directly supervised by one or more employees of the operator, and any employee supervising the free-fall jump device does not have more than one patron under the employee's supervision at any one time; (iii) ensure that only one patron jumps off the structure onto the catch device at any one time; (iv) ensure that the structure that allows a patron to jump off onto the catch device is — <ul style="list-style-type: none"> (I) a static structure; and (II) designed and built only for the purposes of the free-fall jump device; and (v) ensure that the vertical displacement of the free-fall jump device from the structure to the catch device does not exceed 50 metres. <p><u>Second Schedule</u></p> <p>A free-fall jump device is prescribed as an amusement ride where the maximum vertical displacement of a patron above the catch device is at least 5 metres.</p>



	<p><u>Fourth Schedule</u> A free-fall jump device is prescribed as a major amusement ride where the maximum vertical displacement of a patron above the catch device is at least 10 metres.</p>
Funicular	<p><u>Definition (Regulation 2)</u> A device for the carriage of patrons in or on a carrier — (i) that is supported and guided by a level or inclined guideway; and (ii) that is propelled by means of a haul rope or other flexible element that is driven by a power unit that remains at a single location, and does not include a lift that is used or designed for use for raising or lowering, or both raising and lowering, people or goods, or both people and goods, in a substantially vertical direction.</p> <p><u>Operator's further duties (Regulation 19A)</u> The further duties under Regulation 19A for the operator of an aerial ropeway will apply to the operator of a funicular. These include visual inspection and non-destructive testing inspection performed on every rope-fixing of the funicular.</p> <p><u>Second Schedule</u> A funicular is prescribed as an amusement ride under the Second Schedule to avoid ambiguity that it is designed primarily for the purpose of transportation.</p> <p><u>Fourth Schedule</u> A funicular is prescribed as a major amusement ride under the Fourth Schedule.</p>
Mechanical Simulator	<p><u>Definition (Regulation 2)</u> A device — (i) that consists of a unit in the shape of an animal, a saddle, a seat, a surfboard or any other platform that is mounted on a static base or support; (ii) that uses mechanical movements of the unit to simulate a rodeo, surfing or any other activity that requires a patron to maintain the patron's balance; and (iii) that is designed to allow a patron to fall off the unit during the patron's use of the ride.</p> <p><u>Third Schedule</u> A mechanical simulator is not excluded from the regime even if it has a total motive power rating of not more than 1.1 kilowatts.</p>
Play Net	<p><u>Definition (Regulation 2)</u> A device consisting of one or more nets — (i) made of any material or combination of materials including, but not limited to, ropes, wires, webbing, fabric or chains that form a flexible interlaced structure; and; (ii) that are intended for one or more patrons to bounce on, walk on, crawl on, roll on, lie on or play on.</p> <p><u>Operator's further duties (Regulation 19C)</u> The operator of a play net must –</p>

	<p>(i) where the vertical displacement of a patron on the play net above the ground is at least one metre, ensure that the boundaries of the play net are barricaded or otherwise protected with a physical barrier to prevent the patron from falling off the play net; and;</p> <p>(ii) impose adequate control measures to ensure that all patrons of the play net can safely access and exit the play net.</p> <p><u>Second Schedule</u> A play net is prescribed as an amusement ride under the Second Schedule, where at least 150 square metres of its total area is installed —</p> <p>(i) horizontally, or substantially horizontally, such that a patron may recline without holding on to the play net; and;</p> <p>(ii) at least 5 metres above the ground or water surface.</p>
Roller Glider	<p><u>Definition (Regulation 2)</u> A device that includes a gliding mechanism (whether power-driven or not) —</p> <p>(i) that moves on or is suspended from an elevated track; and;</p> <p>(ii) that allows a patron holding on to or attached to the gliding mechanism to move along the track, but excludes a roller coaster.</p> <p><u>Operator's further duties (Regulation 19D)</u> The operator of a roller glider must ensure that —</p> <p>(i) each lanyard of the harness securing a patron to the roller glider has a backup safety device so that, if any point on the lanyard fails, the harness continues to secure the patron to the roller glider;</p> <p>(ii) only one patron rides the roller glider at a time, unless the roller glider has engineering controls in place to ensure that there is a sufficient distance, between patrons riding the roller glider, to avoid a collision;</p> <p>(iii) the roller glider is installed with a braking system that decelerates the gliding mechanism of the roller glider and brings the gliding mechanism to a safe stop; and</p> <p>(iv) the roller glider is installed with an additional braking system (such as an over-travel restraint, a buffer or an additional brake) that —</p> <p>(I) will bring the gliding mechanism of the roller glider to a safe stop in the event that the braking system mentioned in paragraph (c) fails; and</p> <p>(II) does not require any action on the part of the patron.</p> <p><u>Second Schedule</u> A roller glider that is not power-driven, is prescribed as an amusement ride under the Second Schedule where —</p> <p>(i) the maximum vertical displacement a patron is taken through in the course of the ride is at least 5 metres; or;</p> <p>(ii) at any point along the course of the ride —</p> <p>(I) the vertical displacement of the patron may be at least 10 metres above the access level; or</p> <p>(II) there is no access level.</p>

	<p><u>Third Schedule</u> A power-drive roller glider is not excluded from the regime even if it has a total motive power rating of not more than 1.1 kilowatts.</p> <p><u>Fourth Schedule</u> A power-driven roller glider is prescribed as a major amusement ride under the Fourth Schedule where –</p> <ul style="list-style-type: none">(i) the maximum vertical displacement a patron is taken through in the course of the ride is at least 5 metres; or;(ii) at any point along the course of the ride —<ul style="list-style-type: none">(I) the vertical displacement of the patron may be at least 10 metres above the access level; or(II) there is no access level.
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