

機動遊戲機技術指引：

一種設計強調作飄移用途的小型電動車 – 亦稱「甩尾車」

Guidelines for Amusement Ride :

A Battery-powered Cart Whose Design Emphasizes on Drifting, Also Known as "Crazy Cart"

一般概要

「甩尾車」是一種設計強調用作飄移用途的小型電動車。根據《機動遊戲機 (安全) 條例》(第 449 章)(《條例》), 機動遊戲機是指任何以動力推動、設計給公眾人士駕駛或乘坐而且主要是作娛樂用途的裝置。「甩尾車」設施(包括「甩尾車」及其車道和有關連的裝置)如符合上述定義, 該設施便屬於機動遊戲機。

由於「甩尾車」設施的本質有別於傳統機動遊戲機(例如旋轉木馬、過山車和摩天輪等), 現行的《機動遊戲機實務守則》未能涵蓋「甩尾車」的所有風險, 其中包括駕駛者的駕駛技巧和態度等。因於, 機電工程署發出本技術指引, 列明「甩尾車」設施作為機動遊戲機使用時的具體要求。

可提供訓練的認可機構^(a)

「甩尾車」設施的擁有人須根據《條例》規定, 聘用主管人員和足夠人數的操作員以執行操作和保養工作。主管人員和操作員須完成針對「甩尾車」設施的操作、保養和緊急情況處理所制定的安全訓練。該訓練必須由小型賽車範疇的認可機構提供, 例如屬小型賽車範疇的本地體育總會、國際汽車聯盟成員等。香港汽車會屬於可提供安全訓練的認可機構之一。

General Description

"Crazy Cart" is a kind of battery-powered cart whose design emphasize on drifting. According to the Amusement Rides (Safety) Ordinance (Chapter 449) ("ARSO"), amusement ride means a power driven device which is designed to be driven or ridden by members of the public primarily for amusement purposes. "Crazy Cart" facility, including Crazy Cart, circuits and associated devices, which meets the above definition shall be an amusement ride.

In view of the difference between the nature of "Crazy Cart" facility and that of traditional amusement rides (e.g. carousel, roller coaster, observation wheel, etc.), the current *Code of Practice for Amusement Rides*, which focuses on traditional amusement rides, may not address all the risks associated with the "Crazy Cart", including the driving technique and general behavior of the participants. In this connection, the Electrical and Mechanical Services Department issues these guidelines setting out the specific requirements when the "Crazy Cart" and the associated track are used as an amusement ride.

Recognized Organization to Provide Training^(a)

According to the ARSO, the owner of "Crazy Cart" shall employ a Competent Person in respect of the ride and adequate number of Operators to perform the operational and maintenance duties. The Competent Person and the Operators shall complete specific safety training on the operation, maintenance and emergency handling of "Crazy Cart" facility. The safety training shall be provided by organizations which are recognized for motorsports, for example National Sports Association on motorsports / karting, member of the Federation Internationale de l'Automobile (FIA), etc. The Hong Kong Automobile Association is one of the recognized organization for the safety training.

「甩尾車」設施應須符合以下條件

“Crazy Cart” facility should comply with the following conditions:

類別 Type	編號 No.	條款	Condition
設計 (小型車) Design (Cart)	1	提供闊度不少於 25 毫米的安全帶或其他同等有效的設備，設備能避免駕駛者因與其他小型車相撞而受傷。	Safety belts of at least 25 mm in width or other equally effective devices which can prevent drivers from being injured when impact with other carts shall be provided.
	2	小型車須要有吸震護欄包圍車身。	Cart body shall be surrounded by shock-absorbing fenders.
	3	須提供相關產品安全證書。	Relevant certificate(s) on product safety shall be provided.
	4	座位的大小須適合相關參與者。	Seat shall be of appropriate dimensions for participants.
設計 (車道) Design (Track)	5	車道須以由柔性物料建造的屏障包圍，該建造須有足夠的強度以承受和吸收最高時速下的撞擊力，以及有足夠的高度防止小型車騎上。	Track shall be surrounded by barrier with flexible material that is of sufficient strength to withstand and absorb the impact at maximum speed and sufficient height to avoid mounting of carts.
	6	駕駛區域須有足夠的照明，照明度不低於 150 流明。	Driving area shall be sufficiently illuminated. The illuminance shall not be less than 150 lux.
	7	駕駛區域地面須保持平整，不可以出現斷層。	Driving area shall be levelled to be free from discontinuities.
	8	為減低小型車翻側的風險，車道設計須考慮車速、車道的傾斜度、彎位半徑和車道闊度。	Risk of overturning shall be minimized taking into account speed, inclination, bend radius and width of track.
	9	車道內和車道附近的構築物支柱，須妥善地以軟墊包裹，以吸收撞擊時的能源。	All structural columns inside or near the track shall be properly wrapped with flexible materials to absorb the energy during impact by carts.
	10	應避免濕滑、光滑、凹凸不平、不平整或粗糙的地面。運作期間，車道的地面須保持適當的狀況。	Wet, slippery, bumpy, uneven or rough surfaces should be avoided. Track surface must be maintained in suitable conditions throughout the operating hours.
	11	駕駛區域須設有圍欄，以防止一般大眾進入車道。	Driving area shall be fenced to prevent the general public from walking onto the track.

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“Crazy Cart” facility should comply with the following conditions:

類別 Type	編號 No.	條款	Condition
操作 Operation	12	須根據許認可的標準和生產商的建議，訂明駕駛者的年齡和身高的限制。任何駕駛者如未能舒適地乘坐小型車，不應嘗試駕駛。不可超越生產商建議的重量限制。	Age and height restrictions shall be specified with reference to recognized standards and manufacturer's recommendations. Any riders unable to fit comfortably in the cart should be refrained from driving. Never exceed the weight limit recommended by the manufacturer.
	13	須訂明車道上可容許的小型車行駛數量。	Maximum number of carts allowed for running on the track shall be specified.
	14	在同一時間只可操作同一型號 / 性能 / 規格的小型車。	Only one model / performance / specification of cart shall be operated at the same time.
	15	每一架小型車只可供一人駕駛，小型車不可讓駕駛者以外的人乘坐。	Only one participant is allowed for driving a cart. Never carry passengers.
	16	運作期間，須由不少於指定最少數目的指揮員在車道上進行監察。指揮員須曾接受適當的訓練，例如由認可機構 ^(a) 提供的訓練課程。由國際賽車會認可的機構及/或由賽車相關的本地運動總會提供針對「甩尾車」的訓練課程，可被視作適當的訓練。	Operation shall be monitored continuously by specified minimum number of Controllers on the track. Controllers shall be trained, e.g. has completed training conducted by recognized organization ^(a) . Training with coverage on Crazy Cart and provided by an organization recognized by the Federation Internationale de l'Automobile (FIA) and/or National Sports Association of motorsport is acceptable.
	17	運作須以有錄影功能的閉路電視監察。	Operation shall be monitored by CCTV with recording capability.
	18	須在當眼處展示安全指示、風險和安全警告，以顯示安全須知和可能令使用者不適合駕駛「甩尾車」的精神及身體狀況。安全通告須包括(但不限於) 香港法例第 449B 章第 20 條所指明的項目、個人保護裝備的使用、超車的規則、避免車與車的觸撞、正確駕駛路線、避免於運作期間離開小型車、留意操作員的指示等等。	Prominent display of safety instructions and risks, and safety warning, indicating the safety precautions, possible mental or physical conditions that may make riders not suitable to operate the cart. The safety notice shall include, but not be limited to, those specified in section 20 of Cap 449B, use of personal protective equipment, rules for overtaking, avoidance of cart-to-cart contact, proper driving route, avoidance of leaving the cart during the session, attention to operator's instructions, etc.

「甩尾車」設施應須符合以下條件

“Crazy Cart” facility should comply with the following conditions:

類別 Type	編號 No.	條款	Condition
操作 Operation	19	在駕駛前須向參與者說明安全指示和風險。須以適當方法妥善記錄參與者已了解活動風險（例如簽署聲明書、以錄像記錄參與者閱讀/聆聽風險的過程以及和參與者向操作員表示確認）。如設有聲明書，該聲明書不可不合理地將活動風險轉介至參與者身上，聲明書內容及安全介紹的內容須已獲事先批准。教練須滿足特定的訓練和經驗要求。	Drivers shall be briefed of the safety instructions and risks before driving. Proper record of drivers' recognition and acknowledgement of risks shall be kept (e.g. signing of declaration, video record of drivers' reading/listening of the risks and drivers' recognition by verbal response to the operator, etc). Disclaimer, if any, shall not unreasonably transfer the risk to the participants, and contents of safety briefing shall be pre-approved. Trainers shall meet specific training and experience requirements.
	20	駕駛者須使用個人防護裝備，包括頭盔(須扣上下巴束帶)。12歲或以下的駕駛者須使用護頸箍。小童須使用護肘和護膝，成人亦建議使用建議護肘和護膝。駕駛者須穿著運動鞋(縛好鞋帶及膠鞋底)，不可赤腳或穿著拖鞋駕駛。鞋帶須保持縛好並與車輪、馬達和驅動系統分隔。所有個人防護裝備在任何時候均須妥善存放和保養。	Participant shall be equipped with personal protective equipment (PPE) including helmet (with chin strap securely buckled). Neck support collar is required for riders aged 12 years or below. Elbow guards and knee guards are compulsory for children and are recommended for adults. Always wear athletic shoes (lace-up shoes with rubber soles). Driving with barefoot or sandals is not allowed. Shoelaces must be kept tied and out of the way of the wheels, motor and drive system. All PPE are to be properly upkept and maintained at all times.
	21	駕駛者須穿著妥善服飾，包括束起頭髮、沒有鬆脫的物件和妥善的衣著。	Driver shall be in proper clothing, i.e. long hair properly tied up, no loosen objects and proper dressing.
	22	保持手指和身體其他部份離開驅動鏈、轉向系統、車輪和所有其他轉動零件。嚴禁在駕駛時使用耳筒或手提電話。	Keep fingers and other body parts away from the drive chain, steering system, wheels and all other moving components. Headphones and mobile phones are strictly prohibited when driving.
	23	須設有指定電池充電區域，設有妥善措施以確保機電及防火安全。須定期檢查充電器應有否損壞。	Designated battery charging area with proper measures for electrical and mechanical and fire safety. Chargers shall be regularly checked for damages.

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“Crazy Cart” facility should comply with the following conditions:

類別 Type	編號 No.	條款	Condition
操作 Operation	24	須提供急救設施，至少 1 名當值操作員須持有由認可機構發出的有效急救證書和了解處理涉及「甩尾車」的緊急情況，包括（但不限於）受傷、火警等。	First aid facilities shall be provided. At least one of the operators on duty shall be trained by a recognized organization on handling of emergency situations involving Crazy Cart including, but not be limited to, injuries, fire incident, etc.
	25	須安排足夠保險額，對損毀、參與者人身傷害和第三者等提供保障。	Sufficient insurance coverage on compensation for damages and injuries to players and the third-party shall be arranged by cart owner.
保養 Maintenance	26	每天進行操作前檢查 <ul style="list-style-type: none"> · 車身保護 · 座位 · 驅動、轉向系統和輪軸 · 沒有利邊或尖角 · 車道地面 · 車道圍欄 · 充電位置 · 安全告示 	Daily pre-operational check: <ul style="list-style-type: none"> · Cart body protection · Seat · Driving, steering and tire · No sharp edges or angles · Track floor · Track barrier · Charging area · Safety Notice
	27	須根據生產商指示為小型車進行保養及維修，只可採用生產商授權的更換零件，不應更改原廠設計和配置。如部件有損蝕和損壞，應立即更換。	The cart shall be maintained and repaired in accordance with the manufacturer's guidelines, using only the manufacturer's authorized replacement parts and should not be modified from the original design. Worn or broken parts should be replaced immediately.
	28	須為小型車和車道的進行定期保養	Routine maintenance shall be carried out for carts and circuit.
	29	定期進行審查並保存相關記錄	Regular comprehensive self-audit and report keeping.

機電工程署

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