

Incident Summary #II-899461-2019 (#15010) (FINAL)

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| SUPPORTING INFORMATION | Incident Date | August 24, 2019 | |
| | Location | Vancouver Island, BC | |
| | Regulated industry sector | Amusement Devices - Zipline | |
| | Impact | Qty injuries | 2 |
| | | Injury description | Bruising on guest leg size of a toonie. Guide had minor back pain the next day. |
| | | Injury rating | Minor |
| | Damage | Damage description | Brake block rubber protection pad had excessive wear/tearing. |
| | | Damage rating | Moderate |
| Incident rating | Moderate | | |
| Incident overview | <p>Zipline braking block got stuck on the zipline and was not able to be fully deployed, resulting in lack of braking force for a guest when entering the landing zone.</p> <p>Two minor injuries were sustained, the guest had bruising on their leg the size of a toonie. Guides back was sore the next day.</p> | | |
| INVESTIGATION CONCLUSIONS | Site, system and components | <p>This zipline consists of a pulley suspended on a rope, mounted on a slope between platforms/landings. Ziplines require some sort of braking system, this zipline uses a brake block system. The brake block is sent out on the zipline about 100ft to intercept the guest trolley to aid in the slowing effect, through a pulley and rope system.</p> <p>The braking system is a woodblock, rope and pulley system. The wooden brake block is two blocks of wood with equal dimensions, with a drilled section in the length of the block to let the cable pass through. The brake block is bolted together to secure it to the rope. The brake block moves freely over the rope. A piece of rubber is placed on the side where the trolley collides to absorb the impact and protect the pulley.</p> <p>The trolley is a device that rides on top of the zipline cable and is responsible for safely carrying a rider from one end of the zipline to the other.</p> | |
| | Failure scenario(s) | Rubber protection/cushion on the front of the brake block was worn/ripped causing a small 1cm by 1/2cm piece of rubber to get sucked in between the brake block and cable. This wedged the brake block and prevented it from being fully extended and allowing for full braking potential. The brake block made it out on the zipline between 40-50% of the intended position, this resulted in reduced braking effort. | |
| | Facts and evidence | >A small piece of rubber was found wedged between the brake block and the cable at the time of incident. | |

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| | <p>>The guide was unable to send the brake block back out to its fully extended position that is required for proper braking.</p> <p>During a site visit and conversation with the Guide Supervisor:</p> <ul style="list-style-type: none"> - It was determined that the guide at the lower side of the zipline had called for the release of the guest before the brake block was fully at rest. - The guide on the low side said that when deploying the brake block it all of a sudden jammed up half way out and they were unable to free the brake before the guest entered the braking zone. - Daily course inspections are performed at the beginning of every operating day of all ziplines, braking systems, walks ways and landings. - Reviewed current staff training record, test, and policy sign off. Policy was not clear that guides could not call for the next guest until the brake block had been fully reset. |
| <p>Causes and contributing factors</p> | <p>It is highly likely that the torn rubber padding on the front side of the brake block that was caught in between the cable and the brake block caused the brake to jam up and not be fully extended to allow for full brake effort.</p> <p>It is also likely that a contributing factor is inadequate training and procedures regarding what steps must be in place prior to a guide calling for the next guest.</p> |



Brake block looking down from uphill side.



Back side of brake block where rope from pulley setup attaches



Lower landing platform.