## Incident Summary #II-800508-2019 (#10589) (FINAL)

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| SUPPORTING INFORMATION | Incident Date | | August 20, 2018 |
| | Location | | Whistler |
| | Regulated industry sector | | Passenger ropeways - Above surface ropeway |
| | Impact – Injury | Qty injuries | 0 |
| | | Injury description | NA |
| | | Injury rating | None |
| | Impact – Damage | Damage description | Impact damage to the front forks of a mountain bike. (photo 5) |
| | | Damage rating | Moderate |
| | Incident rating | | Moderate |
| | Incident overview | | A mountain bike being transport up the ropeway lift line by a special purpose bicycle only carrier became dislodged from its rack and fell approximately 35' to the ground |
| INVESTIGATION CONCLUSIONS | Site, system and components | | • The detachable gondola ropeway is utilized in a downhill mountain bike operation.<br>• Passengers and their mountain bikes are transported by the ropeway.<br>• 20 special purpose bike carriers spaced about every 4th or 5th carrier. Each carrier can hold up to 4 bikes loaded beside each other. The bikes are loaded onto the carrier perpendicular to line of travel. (see photo 1)<br>• The special purpose carrier (bike carrier) allows the passenger to roll their bike onto a deck and into a rack which holds the front wheel. The passenger will then occupy a normal carrier (6 passenger enclosed gondola cabin).<br>• A set of side rails (2" in height) on either far side of the platform prevent the rear of the bike from moving laterally off of the platform. (see photo 1)<br>• Attendant is to monitor passengers as they load their bikes onto the special carrier and be prepared to assist if required. |
| | Failure scenario(s) | | A mountain bike failed to remain on the carrier for the entire transportation cycle. |
| | Facts and evidence | | Incident report submitted by operating contractor indicates:<br>• The bike had been loaded by the passenger into position 1 onto the rack of the special purpose carrier. (see photo 1,2 &3 )<br>• The passenger reported that the gondola had stopped just before tower 17 (stop due to door fault).<br>• As the lift restarted they saw the bike shift in the rack and then jostle out of the rack as the carrier moved under tower 17 (photo 4). |

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| | Tower 17 is a hold down tower (rope is under the sheave wheels) and, as would be typical, will cause a bounce to the carriers (more than a support tower which has the rope above the sheave wheels) as they pass under the sheave wheels.<br><br>Special bike carriers were installed in 2015, Installation/alteration work was conducted under an alteration permit issued by Technical Safety BC and included design review conducted by professional engineer licensed in BC.<br><br>In communication with representative of the engineering consultant that conducted the design review, the belief is that no motion of the carrier could cause the rear wheel of the bike to bounce 2" over the side rail. The only way a bike could have gotten by the side rails is if it were an unusually long bike in which the rear wheel could slide around the side rail (the bike that was damaged was described as a medium sized trail bike).<br><br>(Extra-long downhill bike were tested at the time of the acceptance test and it was determined that, in that case, the rear wheels were contained by the side rail.)<br><br>Maintenance staff member indicated that they deemed there was a high likelihood that the rear wheel of the bike had been placed on top of the side rail. The front wheel of the bike is held within a steep sided rack in which the bike is removed by pulling it back, over and out of the pocket which contains it. The only likely way for the bike to become extracted from the front wheel rack (without a person pulling the bike back) is if it the rear wheel were to be left unsupported by the carrier deck. |
| Causes and contributing factors | It is very likely that the bike was placed onto the special purpose carrier without the rear wheel fully placed inside the side rail of the carrier platform. It is also likely that the attendant did not notice the bike's rear wheel was not fully on the deck (wheel likely siting onto of the side rail.<br><br>It is plausible that the stop ,the subsequent restart and the travel of the carrier under tower 17 (hold down tower) may have jarred the bike causing the rear wheel to drop off from the deck and subsequently pull the front wheel out of the rack. |


Photo 1- displaying the rails an where Wheel goes


Photo 2 – Position 1 on rack of the special purpose carrier

Photo 3 – Bikes in Racks

Photo 4, Tower 17- location of incident with bike

Photo 5, Damage to Bike