

Incident Summary #II-1173154-2021 (#21492) (FINAL)

SUPPORTING INFORMATION	Incident Date	April 2, 2021	
	Location	Surrey BC	
	Regulated industry sector	Elevating devices - Escalator or moving walkway	
	Impact	Qty injuries	1
		Injury description	Minor cuts to hand
		Injury rating	Minor
	Damage	Damage description	No damage to regulated equipment
		Damage rating	None
Incident rating	Minor		
Incident overview	<p>The escalator was operating in power save mode. A station mechanic entering the station saw that there was a passenger on the escalator and seeing that the unit was operating in power save mode, they decided to pass their foot across the pedestrian sensor to help the passenger get to the top of the escalator faster. When the escalator accelerated to normal operating speed (90-100 fpm), the passenger, who was not holding the rail, fell backwards and sustained cuts to their hand which required a band aid applied by paramedics. The passenger did not go to the hospital for their injuries.</p>		
INVESTIGATION CONCLUSIONS	Site, system and components	<p>An escalator has metal steps in a continuous loop that move on tracks with a top and bottom landing platform. The platforms house the curved sections of the track, as well as the gears and motors that drive the steps.</p> <p>The truss is a metal structure that supports the tracks which in turn supports the steps. The track is built into the truss to guide the step chain and handrails, which pulls the steps and handrails from the bottom platform to the top in an endless loop.</p> <p>This model of escalator utilizes sensors that are placed at both the upper and lower decks of the escalator that detects passengers (see photo). If there are no passengers that enter the escalator during a pre-programmed time, the unit enters power save mode. In power save mode, the escalator's speed is reduced to a pre-programmed speed (25 fpm). When the sensors detect incoming passengers, the escalator will speed up to full speed (90 to 100 fpm) prior to the passenger arriving at the landing plate area.</p>	
	Failure scenario(s)	<p>The sensors that detect approaching pedestrians were not adjusted properly and did not detect the passenger approaching.</p>	
	Facts and evidence	<p>Based on video evidence, the passenger approached the escalator, but the escalator sensor did not detect them approaching. As such, the escalator remained in power save mode and operated at a reduced speed.</p> <p>As per phone conversations, a station mechanic noticed the slow speed, and in attempt to assist the passenger, passed their foot across the escalator sensors. The sensors activated the unit out of power save mode which increased the speed, causing the passenger to fall backwards. The passenger was not using the handrail.</p> <p>An inspection with the elevator contractor was performed after the incident, and the unit was tested without making any changes to the sensors. Video footage showed</p>	

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	the sensors did not detect the incoming passenger. The sensors were then adjusted as per the manufacturer's instructions with the highest sensitivity, and the issue was resolved.
Causes and contributing factors	The cause of the incident was very likely the result of a station mechanic trying to aid the passenger by speeding up the escalator. The passenger was not holding the handrail and was unaware what the mechanic was attempting to do by accelerating the speed. When the escalator sped up, the passenger fell backwards and sustained minor injuries to their hand.



Escalator Entry/Exit



Sensor