

## Incident Summary #II-674065-2018-2018 (#6585) (FINAL)

SUPPORTING INFORMATION	Incident Date	April 1, 2018	
	Location	Burnaby	
	Regulated industry sector	Elevating devices - Escalator or moving walkway	
	Impact	Qty injuries	0
		Injury description	None
		Injury rating	None
	Damage	Damage description	3 damaged steps, step axial, upper comb plates, up thrust track, hold down track upper landing plate and step chain.
		Damage rating	Major
	Incident rating	Major	
Incident overview	Escalator pile up, steps piled into combplates at the top end.		
INVESTIGATION CONCLUSIONS	Site, system and components	Inside an escalator, a pair of chains wraps around two pairs of gears that are driven by an electric motor. The motor and chains sit within a metal structure known as the truss, which extends between the floors served by the escalator. Within the truss the escalator houses steps and tracks, which allows the conveyer like rotation to travel through the truss with precise alignment and precision.	
	Failure scenario(s)	<p>Licensed mechanic failed to properly investigate grinding noise.</p> <p>Upthrust track was not set to the correct specification which could allow the step rollers to ride higher before entering into the combplates.</p> <p>The hold down track uses a clip on the step roller to hold the step down. When the track is not set to the correct specifications, this could allow the step to rise more than 1mm. The combination of the hold down track and the upthrust track outside of specifications could allow the step to rise and come into contact with the combplates and upper landing deck.</p>	
	Facts and evidence	<p>Onsite investigation:</p> <ul style="list-style-type: none"> <li>Unit had two service call backs prior to the escalator pile up. See figure 1.</li> <li>The proper adjustment for the upthrust track is 1mm. This escalator had the upthrust track set to 6mm. (5mm above maximum allowance)</li> <li>The hold down track was allowing the steps to rise 4mm. (3mm above maximum allowance)</li> <li>Through conversation the Field Mechanic made the Safety Officer aware that he did not have the upthrust track specifications for allowances. Field Mechanic was not provided the documentation to maintain those specifications.</li> </ul>	

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	<ul style="list-style-type: none"> <li>Licensed contractor after discussion would be providing training and documentation to maintain specifications.</li> <li>Field Mechanic was not trained or checking for these allowances at this time as they were not provided the specifications.</li> </ul>
<p>Causes and contributing factors</p>	<p>It is highly likely that the upthrust track and the hold down track were not set to the correct specification after a recent step chain and step replacement, which led to incorrect tolerances causing the pile up.</p> <p>The contributing factor was that the Licensed contractor failed to provide field mechanics with the escalator specifications and tolerances therefore leading to the mechanics not setting the tracks to proper OEM specifications.</p>

Photos or diagrams (if necessary)

Territory Number : FV 50		Bldg Name : METRO		Machine # : 981964	
Contract Number : FV 05591		Address : 4700 KI		Daily Usage : 12	
Building ID : FV 313702		City, St, Zip : BURNV		Government # : 10956	
Product Group : ESCALAIRE		Customer Desig : 112 LUK			
Date	Performed E Type	Task	Description	Comments / Reference	
3/5/2018	██████ Callback	ADJUSTED	Escalator Skirt	"NOISE" 112 LUGARO UP ESC IS OOS, CUST S/D B/C IT MKG A GRINDING NOISE ON UPPER FLR- RTCB MONDAY	
3/29/2018	██████ Callback	CHECKED OPERATION	Escalator Step	ESC 112 LUGARO UP, MKG LOUD GRINDING NOISE, CUST S/D, RTCB MONDAY	

Fig. 1

Showing the service call backs regarding noise.



Steps tread risen above the combplates



Pile up of the steps



Cracked step due to  
impact forces.