

Incident Summary Report II-640991-2018 (#5063)

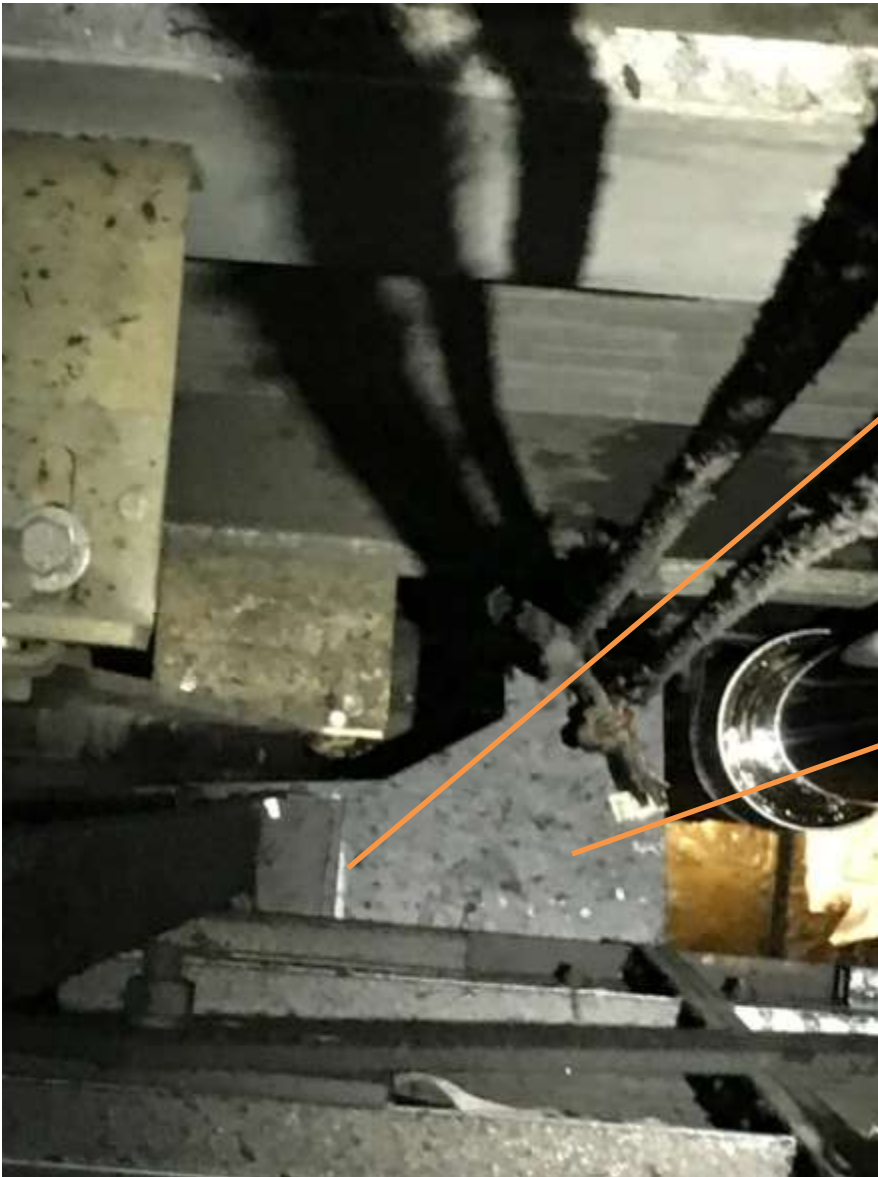
SUPPORTING INFORMATION	Incident Date	December 19, 2017	
	Location	Victoria, BC	
	Regulated industry sector	Elevating devices - Elevator	
	Impact	Qty injuries	0
		Injury description	n/a
		Injury rating	None
	Damage	Damage description	Broken And Bent Bolts
		Damage rating	Minor
Incident rating	Minor		
Incident overview	The elevator suspension means attachment bracket (hitch plate) on the elevator car sling became loose because of some broken (sheared) bolts and the resulting misalignment that tripped the safety switch and the elevator car stopped.		
INVESTIGATION CONCLUSIONS	Site, system and components	A hydraulic pump applies pressure to two hydraulic cylinders with sheaves (grooved wheels) on their tops, wire ropes ride in the sheaves and pull the elevator up via the hitch plate which is bolted to the bottom of the car sling. The hitch is engineered to hold the load plus a safety factor. The elevator is equipped with safety devices called safety plank switches. These switches detect misalignment of the elevator hitch plate safety plank.	
	Failure scenario(s)	The elevator tried to run with some broken and some bent bolts on the hitch plate, the resulting misalignment of the safety plank activated the plank switch, which then stopped the car from running.	
	Facts and evidence	<ul style="list-style-type: none"> • Bent and broken bolts found on the hitch plate and in the pit. • Attached are Photos of misaligned hitch plate with missing bolts. • Maintenance log book shows that monthly maintenance is occurring. 	
	Causes and contributing factors	<p>It is likely that improperly installed or defective bolts on the hitch plate, resulted in them breaking and bending causing the misalignment of the safety plank and activating the plank switch to stop the elevator from running. Loose or defective bolts, which reasonably should have been detected by the monthly maintenance program were likely a contributing factor.</p> <p>In addition, this elevator has seen heavy usage over its life and is of a custom size and capacity which may also have contributed to this event.</p>	



Misaligned Hitch Plate



Misaligned Hitch Plate



Hitch Plate misalignment.

Hitch Plate



Missing bolt