

Incident Summary #II-1222001-2021 (#22773) (FINAL)

SUPPORTING INFORMATION	Incident Date	May 27, 2021	
	Location	Vancouver	
	Regulated industry sector	Elevating devices – endless- belt manlift	
	Impact	Qty injuries	1
		Injury description	Cuts, abrasions to arms and legs
		Injury rating	Minor
	Damage	Damage description	No damage to equipment or property
		Damage rating	None
Incident rating	Minor		
Incident overview	A worker attempting to use a manlift lost their footing when stepping onto the treadle. The worker was pushed down through the floor opening between the 4th floor and 3rd floor after getting hit by the following treadle. The worker's hand and leg got caught on a side panel during the fall. The emergency stop device was enabled but the manlift was then restarted twice without notice.		
INVESTIGATION CONCLUSIONS	Site, system and components	<p>1) Manlift, endless-belt type</p> <p>The manlift is of the endless-belt type, consisting of a power driven endless-belt. The belt is a loop that moves in one direction, allowing trained and authorized personnel to travel up or down, by using one side of the loop to ride up or the opposite side of the loop to ride down. The belt is provided with steps (treadles) and handholds attached to it, for the transportation of personnel from floor to floor. This manlift serves nine floors in an industrial warehouse where it is in continuous operation.</p> <p>Under normal operating conditions, the belt moves continuously; workers can get on when a step passes and get off when passing by any desired floor (Photo #1 & 4).</p> <p>2) Emergency stopping device - A rope-controlled stopping device located within easy reach of the ascending and descending runs of the manlift</p> <p>Ropes are located on each side of the belt and run through each floor, acting as emergency stopping devices when pulled. This will cut off power to the motor and apply the brakes. The ropes also function to restart the manlift only when safety devices designed to stop the car have been reset to their normal operating state. For manlifts of continuous operation, the emergency ropes are not to be used as a normal starting and stopping means. Only authorized and trained personnel are permitted to use the manlifts.</p>	
	Failure scenario(s)	A worker lost their footing as they attempted to get onto the manlift from the 4 th floor. As the worker stepped on to the treadle with their lead foot, their trailing foot got stuck on the floor. The worker was then pushed through the floor opening located between the 4 th floor and 3 rd floor by the next treadle coming down. In the process, the worker had their hand and leg caught on a panel located next to the lift on the 3 rd floor. The emergency stop device was enabled but then restarted twice, without warning.	

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<p>Facts and evidence</p>	<p>Incident report and photos submitted by Health and Safety Coordinator - July 15, 2021:</p> <ul style="list-style-type: none"> • Report confirms that worker was on the 4th floor trying to go down to the 2nd floor at time of incident. • Report states that worker lost their footing as they stepped onto the treadle. Worker was able to put their lead foot on the treadle but was unable to get their trailing foot on it after their foot got stuck to the landing floor. • Report states that worker was pushed down to the 3rd floor after getting hit by the following treadle going down. Worker tried to grab onto a panel on the side of the manlift as they fell, but in the process, got their hand and leg caught on the side of the manlift on the 3rd floor. • Report confirms the starting of the manlift after it was stopped due to emergency. • Report states that worker may not have the proper training for use of manlift. • Report states that a build up of sticky substance was found at landing area where worker lost their footing. • Report states that the manlift was restarted by personnel on the 8th floor after failing to investigate why the manlift had stopped. • Report states written procedures and training may not have been in place at time of incident. • Photos of factory produced substance build up on the 4th landing (Photo #2). <p>Incident follow-up site visit - July 30, 2021:</p> <ul style="list-style-type: none"> • Inspected landings and tested operation of emergency stop devices. Confirmed signage and operating instructions available at all landings. <p>Electrical drawings and wiring diagrams submitted by Maintenance Contractor - August 08, 2021:</p> <ul style="list-style-type: none"> • Wiring diagrams for the operation of the emergency stop devices confirmed to be installed and operating as intended. <p>Telephone conversation with Elevator Maintenance Contractor - August 17, 2021:</p> <ul style="list-style-type: none"> • Maintenance contractor confirmed that additional safety stopping devices designed to prevent restarting of the manlift during an emergency had been approved. Installation start date pending on permit. • Reviewed records of maintenance to confirm all periodic and requirements up to date.
<p>Causes and contributing factors</p>	<p>It is possible that the sticky floor substance may have contributed to the worker losing their balance as they attempted to get on the manlift. It is very likely that limited in-house training on the use of the manlift, along with the lack of understanding of the emergency stopping device functions, contributed to the start-up of the manlift after the emergency stop had been pulled. It is unlikely that equipment failure was a cause of the incident.</p>

Photo #1 – Manlift loading area



Photo #2 & 3 - Factory-related substance build up on the landing area



Photo #4 - 3rd floor landing, looking up to 4th floor

