

Incident Summary #II-1800449-2024 (#54690) (FINAL)

SUPPORTING INFORMATION	Incident Date	November 24, 2024
	Location	Victoria, BC
	Regulated industry sector	Elevating devices - Escalator or moving walkway
	Qty injuries	1
	Impact Injury Injury description	A member of the public fell down an escalator and experienced head trauma. <i>*Cause of death (COD) is not determined by Technical Safety BC. The BC Coroners service conducts their own investigation to determine COD.*</i>
	Impact Injury Injury rating	Fatal
	Damage Damage description	N/A
	Damage Damage rating	None
Incident rating		Severe
Incident overview		A member of the public who was using their walker to assist with their mobility had been shopping for groceries when they entered the top of an escalator moving downwards. This escalator is located outside a retail-grocer at a multilevel mall during a busy holiday shopping week. The escalator was in a constant standard-motion, steadily lowering downwards as intended. The person holding the walker handles fell head forward as the walker lowered with the escalator and fell onto and around the walker and its contents. As a result, they sustained a serious head injury and a few days later passed away.
INVESTIGATION CONCLUSIONS	Site, system and components	The shopping center is a three (3) story outdoor shopping complex with an underground parkade. To access the underground parkade, a person must use stairs, an elevator, or an escalator (Image 2).
		There is a street level entry to a parking lot that also has more access to covered parking areas. This entry level provides access to stores on the main level of the shopping complex. The shopping center has multiple stores and services including a large retail and grocery store. Once parked, patrons can use the stairs, elevator or an escalator to move between levels and vendors.
		The purpose of an escalator To move people vertically between levels inside or outside a building or other public space. They are often used in places where large numbers of people need to move, such as airports, shopping malls, and train stations. Escalators are a good choice for shorter distances because they can move more people as they are designed to operate constantly rather than on demand elevators (Image 1).
		Components of the escalator The escalator T5799639 is manufactured with an operating speed of 100 feet per minute (fpm) and travels a distance of approximately 15 feet. It has multiple safety features including: <ul style="list-style-type: none"> Yellow Plastic Safety Demarcations state of the art: fire resistant and oil-resistant material.

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- LED Step Gap Lighting, LED Comb Lighting Readily visible entry and exit points make it easy and safe to enter and exit the unit - a particular benefit for the older generation and the visually disabled.
- Skirt Gap Cover Although the gap between steps and skirting is already minimized, skirt brushes provide extra safety. This helps avoid entrapment, which is especially important for children's small feet and for passengers wearing rubber soles and flip flops. Handrail Entry Protection Brushes at the handrail entry point protect the little hands of curious children and prevent them from getting trapped.

Cart Conveyor (next to escalator)

The conveyor moves carts the same direction, in tandem with the escalator to provide an alternative for specially equipped shopping cart transport. Carts have locking breaks that are activated when they are placed on the conveyor, and they travel down independently from the escalator.

Customer would push a shopping cart onto the cart conveyor. Cart conveyor senses shopping cart and moves it up or down to the next level. Customer rides the escalator to the next level and retrieves the shopping cart upon its arrival.

Bollards (posts) ([Image 1](#))

Metal posts were placed near the entrance of the escalator to help with guiding foot-traffic on and off and ideally these safety barriers are to prevent and block people from bringing bulky items like wheelchairs, shopping carts and prams onto the escalator.

Some locations install different barriers or bollards at the entrances and landing zones to their escalators to discourage passengers from riding the escalator with items such as carts, buggies, strollers or luggage. This is done to help prevent property damage or injuries. There are no current requirements in the CSA B44 code for such barriers or bollards.

Warning signage ([Image 3](#) & [Image 4](#))

The escalator had the required caution signs posted on the escalators, located between the cart conveyor and handrail. Images on required signage did not highlight the potential hazard and consequences of the taking those items up or down the escalator.

Additional cautions signs were also located at the top of the staircase beside the escalator that highlighted no wheelchairs, strollers, shopping carts and mobility scooters as well as an arrow pointing to the location of the elevator next to the staircase and escalators to be used as an alternative. However, this was located on the opposite side of the stairs.

Maintenance

Preventative Maintenance is preformed monthly as required by a maintenance control plan and attendance to the unit is conducted when issues are reported to the contractor.

History

According to the maintenance log books the escalator has had previous call backs relating to normal wear of equipment as well as vandalism and misuse to the equipment.

Failure scenario(s)

The shopping center is a large outdoor shopping complex with multiple escalators and elevators. There is ground level parking, however due to the volume of people shopping on a Sunday at 16:00 during the Christmas season it was very busy in all areas. Customers have

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the option to park on the different parkade levels and use an escalator, elevator or stairs to move between levels.

The escalator was regularly inspected, maintained and functioning normally and as intended. All systems were functioning normally during the day as there were no faults recorded in the escalator maintenance logbook or calls for service from the client.

Several locations around the shopping centre include an escalator, stairway and entryway and were marked with required and additional warning signage.

Safety bollards which are the posts to prevent carts from entering escalators at top and bottom were installed in-front of the escalators preventing large items from being moved onto the escalator for transport but gaps to walk through in this case allowed a person to navigate mobility walker size cart through them.

There is a large capacity elevator that is located adjacent to the escalators which is commonly used by customers with mobility challenges and allows for shopping carts.

The customer had a red reusable grocery bag with approximately twenty-five (25) pounds of groceries resting on his walker.

At the initial descent of the escalator, the customers mobility walker tips forward and begins to fall. The customer attempts to grab and hold his mobility walker however the person loses balance and falls with groceries ejecting and mobility walker fully tipping as the patron falls and his head makes contact with the escalator stairs resulting in an injury.

A few shoppers on the escalator and at the top came to assist the injured shopper by stopping the escalator once it was at the bottom and calling for emergency services, mall security arrived and rendered first aid.

CCTV Footage

Video shows the shopper walking with his mobility walker in the direction of the elevator. Then walks past it with the mobility walker towards escalator, passing signage and warnings ([Image 4](#)) and navigates through an opening behind a row of safety bollards ([Image 1](#)) and enters the downward moving escalator ([Image 5](#)).

Technicians Reports

The escalator was functioning normally, and no servicing was required that day. Elevating technicians ruled out mechanical failure. The only component to be changed after the incident was a hand-rail drive chain that "would not have affected escalator function or public use". "At the time of the incident, the handrails were observed to be turning properly and in sync".

Code CSA B44 Safety Code for Elevators and Escalators

Escalators are required in section 6.1 of the B44 code to have caution signs located at the top and bottom landings of each escalator readily visible to boarding passengers. The sign shall include the following wording:

- "Caution"
- "Passengers Only"
- "Hold Handrail"
- "Attend Children"
- "Avoid Sides"

Facts and evidence

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	<p>Any additional signs or graphics related to safety need to be located so they do not obstruct boarding passengers' view of the required sign or obstruct passenger flow at the landings. (Image 3).</p> <p>Ruled out - Weather Factors and Escalator Exposure</p> <p>The weather on Sunday, November 24, 2024, was sunny with clouds, plus eight (8) Celsius as was found on the weather network. No water is seen anywhere around escalator and freezing temperatures would not be a factor in the functioning or traction.</p>
Causes and contributing factors	<p>The use of the escalator with a mobility assistance walker was very likely the main factor that caused the incident. It is very likely that the following factors also contributed to the incident:</p> <ul style="list-style-type: none">• Bypassing safety bollards that are intended to prevent taking bulky items on escalator.• Positioning of the bollards allowed a gap to the side of the entrance for the patron to enter with a bulky mobility cart in a direction where signage visibility was limited.• Failing to observe and or follow the posted warnings.• Warnings exceeding code requirements were ineffective at warning the individual who entered from the side of the bollards.• The weight of the groceries on the walker making holding the walker up as the escalator lowered difficult.



Image 1 – Bollards to prevent carts on escalator.



Image 2 – Escalator bottom.



Image 3 - stairs next to escalator and signage at the top right.



Image 4 – Signage warnings on escalator before boarding.



Image 5 – Footage still of a person with a walker and cart with groceries entering moving escalator.