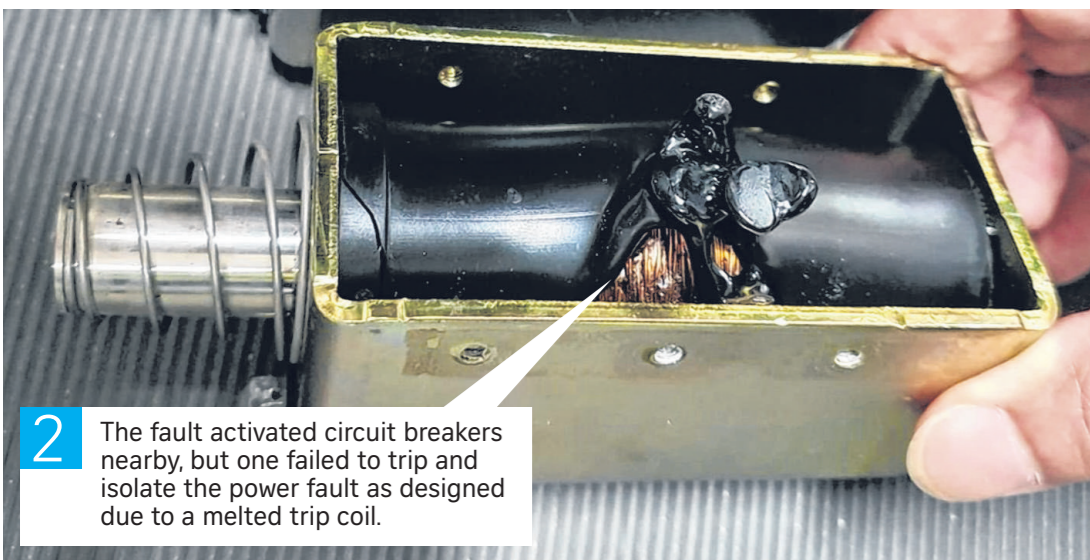


# What caused the 3-line MRT disruption on Oct 14

## CAUSE OF POWER FAILURE



**1** A burnt section of 22 kilovolt cables between Tuas Link station and Tuas West Road station triggered a power fault.



**2** The fault activated circuit breakers nearby, but one failed to trip and isolate the power fault as designed due to a melted trip coil.

**3**

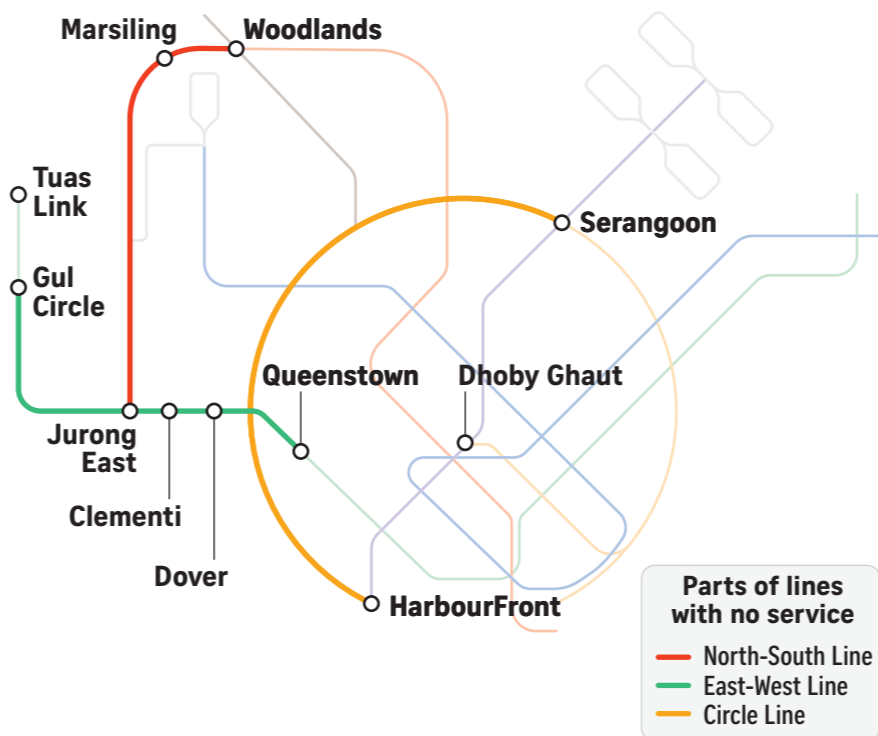
- The circuit breaker failure caused a secondary protection system to trip, cutting off power supply from the Tuas Depot substation.
- This affected a larger zone of stations along the North-South and East-West Lines (NSEWL).

**4** Operator SMRT decided to draw power from the Buona Vista substation, which supplies power to the Circle Line (CCL).

**5** An SMRT staff member and supervisor misread equipment at the substation and wrongly assumed the fault in Tuas had been isolated.

**6** Failure to isolate the fault before drawing power led to a voltage dip at the Buona Vista substation, causing a power trip that affected the CCL.

## TIMELINE OF EVENTS



**Oct 14, 6.58pm**

- A power outage caused by concurrent faults along the Tuas West Extension shuts down train service between Woodlands and Jurong East stations on the North-South Line and between Queenstown and Gul Circle stations on the East-West Line.



- This causes 12 trains to stall on the tracks. It also affects in-train lighting and air-conditioning. The backup battery on affected trains kicks in to provide emergency lighting and ventilation.

**7.34pm**

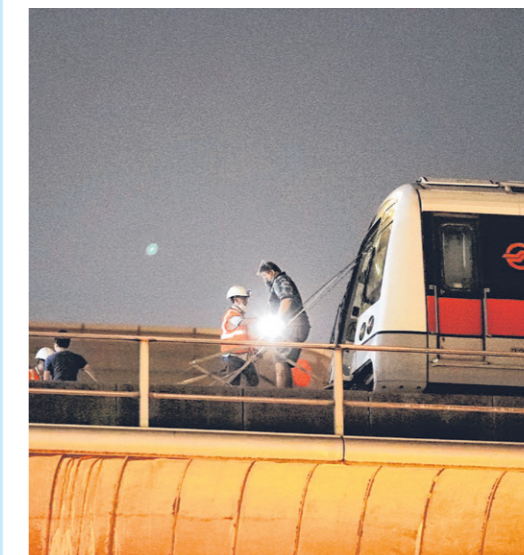
- An attempt to draw power from the Buona Vista substation causes a second power outage, affecting service between HarbourFront and Serangoon stations on the CCL.
- Three trains stall as a result.

**7.38pm**

- SMRT decides to detrain passengers on the stalled trains as it cannot restore power supply quickly.
- As a safety measure, electrical protection devices are installed to guard against the accidental turning on of traction power.
- SMRT staff walk along the tracks to reach the stalled trains and help commuters.

**7.53pm**

Detrainment of NSEWL passengers begins.



**7.59pm**

Detrainment of CCL passengers begins.

**8pm**

Power supply is restored for CCL, but SMRT does not restore traction power along sectors where detrainment is taking place for safety reasons.

**8.17pm**

All stranded CCL passengers reach the nearest stations.

**8.42pm**

Commuters from 11 stalled trains on NSEWL reach the nearest stations.

**8.43pm**

Train service along CCL progressively resumes.

**8.44pm**

Detrainment of the last train near Bukit Batok station is temporarily halted due to rain and lightning risk, with 78 commuters still on board.

**9.43pm**

The 78 commuters alight at Bukit Batok station.

**10.34pm**

Train services are progressively restored on the NSEWL.



The **three-hour, 36-minute** incident affected **123,000** commuters. Of these, **6,500** commuters were on the **12** stalled NSEWL trains and **275** were on the **three** stalled CCL trains.