

Charging devices with non-original parts can

# DESTROY HOMES AND LIVES



INFO PACK

A joint initiative by

Land Transport  Authority



**SCDF**  
The Life Saving Force  
... for a safer Singapore



## Charging devices with non-original parts can destroy homes and lives

Based on investigations conducted by the Singapore Civil Defence Force (SCDF) and the Land Transport Authority (LTA), majority of active mobility device-related fires originated from charging of devices with non-original parts. This includes modifications to batteries, device electrical circuitry, and irresponsible charging behaviours. Some of these fires have resulted in property damage, injuries, and even the loss of innocent lives.

## The impact of active mobility device fires can be devastating with property damage, injuries or even the loss of lives



### Case Study 1: Bedok North Road

The owner was awoken by the sound of explosion and saw smoke emitting from his Power-Assisted Bicycle (PAB) battery which was left charging unattended. A fire broke out from the device and attempts to put out the fire were unsuccessful.



Investigations revealed that that fire originated from the battery of the PAB and a non-original charger (without Safety Mark) bought from an online marketplace seller was used at the time of the fire.



### Case Study 2: Tampines St 45

The owner was charging the Power-Assisted Bicycle (PAB) when smoke started emitting from the lithium-ion battery pack on the PAB and it exploded. The resulting fire spread rapidly in the unit and the owner suffered 2nd degree burns to his right forearm.



**Investigations revealed that the device was bought first-hand from a retail shop and the lithium-ion battery used at the time of fire was a non-original part bought from an online marketplace seller.**



### Case Study 3: Lorong 6 Toa Payoh

The fire originated in a stationary Power-Assisted Bicycle (PAB) left in the kitchen of a residential unit. The intense heat and fire caused extensive damage, including to the unit above. The elderly PAB owner also suffered smoke inhalation.



**Investigations revealed that the circuitry of the PAB was modified with an anti-theft alarm (non-original) and had not been used for an extended period.**





## Case Study 4: Woodlands Drive 16

The owner of the Personal Mobility Device (PMD) was taking the lift down from the ninth floor with his device when a burst of flames suddenly occurred and engulfed the entire lift car within seconds. The PMD owner sustained serious burns to his body and unfortunately, succumbed to his injuries thereafter.



**Investigations revealed that the PMD was a non-compliant device and had been modified with a non-original, higher-powered battery pack. The motor of the PMD was also found to be modified. The most probable cause of fire was due to a damaged battery pack and overheating of components.**



### Case Study 5: Bedok South Road

The owner of the Power-Assisted Bicycle (PAB) was charging his device along the corridor from a power socket within his house via an extension cable when he noticed the PAB emitting sparks. He removed the extension cable and returned to his house. Despite his efforts, the PAB caught fire thereafter and triggered an evacuation of some 50 residents.



**Investigations revealed the PAB was non-registered and was purchased from a secondhand seller back in 2021. The owner had also modified the PAB by equipping it with a non-original battery bought from an online marketplace.**





## Case Study 6: Bukit Batok West Ave 9

The owner of the Power-Assisted Bicycle (PAB) was taking the lift from the 10th floor when sparks occurred from the bottom of the battery. Shortly after, smoke was seen, and a fire ignited in the lift.



**Investigations revealed that modifications were carried out to the device controller. The controller has also been shifted from the bottom bracket area to the rear rack. Additionally, the device LCD display panel and other controls were also removed from its default locations.**



## Case Study 7: Jalan Bukit Merah

A Power-Assisted Bicycle (PAB) parked at a hawker centre saw smoke emitting out from its battery. Shortly after, an explosion occurred, and the device was ablaze. Several stalls near the device suffered extensive heat damage.



**Investigations revealed that the owner had a non-original battery pack in the delivery bag attached to his PAB. The battery has been modified to increase voltage.**

**Discover how fast an AM device-related fire spreads here!**



Video 1

<https://go.gov.sg/bdsvideo1>



Video 2

<https://go.gov.sg/bdsvideo2>



## How to minimise active mobility device-related fire risks

Avoid these common non-original parts or modifications that can affect active mobility device safety and increase fire risks.



▲ Additional battery pack or extra cabling that leads to a bag concealing additional battery pack.



▲ Non-original motorhub with printed wattage value showing more than 250W for Orange seal and 200W for Blue seal.



▲ Non-original handlebar grip that rotates or added levers that may suggest device is modified with throttle to bypass the pedal-assisted function.





▲ Tampering of the electrical components through installation of additional lighting, electronic accessories, etc. that draw power from the active mobility device's electrical system.

Do look out for the non-original parts and modifications especially when buying secondhand active mobility devices. If you currently own an active mobility device, refrain from installing these non-original parts or carrying out these installations on your device. To further safeguard yourself and your family, buy devices from reputable shops. If buying from online sources, ensure the device is in its original state. Here are some tips to take note of:



### Power-Assisted Bicycles (PAB)

- Ensure the PAB is registered with LTA and sealed with an orange seal — this means it previously passed an inspection at an LTA-Appointed Inspection Centre.
- Ensure that the PAB still complies to the EN15194 standard, i.e. PAB should be in original/ stock condition.
- Power assist from the motor should only be present when pedaling. Visit <https://go.gov.sg/pabrequirements> for more information.





## Personal Mobility Devices (PMD), e.g. e-scooters

- Ensure the e-scooter is registered with LTA and carries an e-scooter registration mark — this means it previously passed an inspection at an E-scooter Inspection Centre and is compliant with LTA's device requirements.
- Ensure that the PMD complies to the UL2272 standard, i.e. PMD should be in original/stock condition.

Land Transport Authority

Registration Mark

000YZ

Do Not Tamper



## Personal Mobility Aids (PMA)

- Ensure that the PMA has a maximum device speed of up to **10km/h\*** and has not been illegally modified with non-original/additional batteries.

*\*The maximum device speed for PMA will be lowered from 10km/h to 6km/h in 2025. More details will be announced at a later date.*



Visit the [LTA Website](#) for the full device requirements.

## How to charge responsibly and safely

### Dos

- **Do** use a power adaptor that carries the Safety Mark and is recommended by the manufacturer.
- **Do** charge active mobility devices on a hard, flat surface to allow optimal dissipation of heat.
- **Do** regular examination of batteries for any damages or deformities such as bloating, corrosion or powdery residue.

SAFETY MARK



### Don'ts

- **Do not** charge active mobility devices or its batteries near combustible materials or along an escape path.
- **Do not** leave charging devices/batteries unattended for an extended period or overnight.
- **Do not** charge active mobility devices immediately after use.
- **Do not** tamper, install additional batteries, or attempt to repair active mobility devices on your own.



Visit the [SCDF website](#) for more info and other fire safety tips.



## How to dispose of motorised active mobility devices

**Non-compliant/illegally modified active mobility devices** or **active mobility devices in long storage** are also fire risks and should be disposed of immediately. Dispose of active mobility devices responsibly through NEA-appointed e-waste recyclers.



Refer to the **“Disposal of Motorised Active Mobility Devices”** tab on [LTA Rules and Code of Conduct page](#) for a list of e-waste recyclers.

Do note that if an active mobility device causes a fire that results in property damage or death, the owner may face further prosecution by the relevant authorities.



### NOTICE

#### It is an offence to use active mobility devices with non-original parts

The LTA takes a serious view on devices with non-original parts. To safeguard public safety, the LTA carries out regular enforcement operations to seize unregistered or non-compliant devices. If caught, offenders face maximum penalties of fines up to \$20,000 or jail term up to 12 months, or both.

## About the Be Device-Safe Programme



The Be Device-Safe Programme is jointly organised by the Active Mobility Fire Safety Taskforce, co-chaired by the Land Transport Authority (LTA) and Singapore Civil Defence Force (SCDF). The programme aims to educate motorised active mobility device users on the causes of active mobility device-related fires and how to ensure safe usage and treatment of devices.

Be Device-Safe. Equip yourself and your loved ones with tips on how to prevent active mobility device-related fires.