Tips from Training

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E-Bikes & E-Scooters Fires/Emergencies

At Bronx Box 2867 (1/12/2021) a lithium-ion battery powering an e-bike sparked a blaze. Several civilians & a firefighter were injured. (Battery circled above).

Scan QR or click link for Video of thermal runaway

Scan QR or Click link for UL video

In the last year the FDNY has operated at nearly 50 documented fires that were related to e-bikes and e-scooters. The origin of these fires is from the lithium-ion battery power source. In most cases, these fires have started while the unit is being charged. Consider the following points regarding lithium-ion battery fires and emergencies. **All members are encouraged to view the video links above.**

For emergencies or fires involving e-bike/e-scooter lithium-ion batteries:

- Transmit a 10-80-1 and request BFI. The IC should then contact Haz-Mat 1 or the Haz-Mat Battalion via cell phone for further instructions.
- **Wear full PPE, including a donned SCBA facepiece, whenever near a damaged/smoldering lithium-ion battery.**
- Popping noises or white smoke from a battery may be an indication of thermal runaway. Thermal runaway begins when the heat generated within a battery exceeds the amount of heat that is dissipated to its surroundings, creating a domino effect within the battery until failure and fire. **The white smoke from the battery is toxic and highly flammable.**

For structural fires:

- Follow standard SOP's for structural fires that originate from e-bikes/e-scooters.
- **After the fire is extinguished, be aware that the batteries can reignite.**
- When practical, remove the e-bike/e-scooter from the fire building via the interior stair. Do not use the elevator.

For emergencies involving lithium-ion batteries that are disconnected from the e-bike/e-scooter:

- When possible, submerge the battery in a 5-gallon plastic bucket filled with water and remove it from the building. Leave the cover off the bucket so no gases build up inside.
- Consider having a charged handline available during removal to protect members from thermal runaway.

For emergencies involving lithium-ion batteries that are still connected to an e-bike/e-scooter:

- When practical, remove the e-bike/e-scooter from the building via the interior stair. Do not use the elevator.
- Consider having a charged handline available to protect members from thermal runaway.

The hazard of lithium-ion batteries is increased when stored below grade or when multiple batteries or bikes are stored.

These fires, even when considered minor must be properly tracked in NYFIRS.

When conditions warrant, establish a watch line.