

Fatal 6 - Battery Explosion

WHAT HAPPENED

A 24V wet lead-acid mobile plant battery exploded whilst on charge at a quarry. The battery was in a locked storeroom at the time and no one was injured.

Investigation into the cause of the explosion found that the six cell caps on top of the battery had not been removed before charging, preventing hydrogen gas given off during the charging process from venting off safely. A build up of heat inside the battery is thought to have ignited the hydrogen gas, causing the battery to explode. There was no evidence of electrical sparking.



Photograph showing the damage to the battery casing after the explosion. Also shown is an intact battery with its six cell caps fitted.

Damage to Battery Casing

LEARNING POINTS / ACTIONS TAKEN

- Non-venting cell caps must always be removed when charging a wet lead-acid battery. If in doubt remove the caps.
- Always charge batteries in a well vented area.
- Prevent unauthorised access into battery charging areas and ensure battery charger units and other electrical equipment are kept a safe distance away from the battery or any hydrogen gas that may be released during charging.
- Safequarry editor's note - other resources on safequarry relating to battery charging include a Toolbox Talk - <https://www.safequarry.com/toolbox/Changingplantvehiclebatteriessafely.pdf.pdf>.
- The Health and Safety Executive also have a relevant guidance note: indg139 Guidance on Using Electric Storage Batteries Safely this can be found at <http://www.hse.gov.uk/pubns/indg139.pdf>

LOCATION: QUARRY
ACTIVITY: MAINTENANCE & HOUSEKEEPING
SUB ACTIVITY: N/A

ALERT STATUS: Normal
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