

## Battery explosion during routine maintenance

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A Chief Engineer suffered minor injuries in a battery explosion when disconnecting a cable from the battery.

### What happened?

The incident occurred onboard a harbour tug.

The Chief Engineer was planning to replace a battery disconnect switch that had failed. While disconnecting the positive terminal, both terminals were inadvertently short-circuited with a spanner and the battery exploded, injuring the Chief Engineer.

Operations were stopped, first aid was given, and the tug returned alongside. After assessment at hospital the Chief Engineer returned to the tug with only minor injuries. The tug was out of service for four hours.

### What went right?

- The external power supply breaker was switched off.
- To be able to work on the switch safely, it was decided to disconnect the battery cables so the switch would be isolated from the battery 24VDC.

### What went wrong?

The battery was inadvertently short-circuited with a spanner.



Battery disconnect switch



switchboard



damaged switch

#### IOGP Life Saving Rules:



Energy isolation

### Lessons learned

- Protect battery terminals with plastic caps to avoid accidental contact.
- Ensure proper PPE (gloves, apron, face shield) is used when working on

batteries.

- Consider the use of tools appropriate for battery handling.
- Changes to vessel's planned maintenance system:
  - Follow manufacturer's recommendations for battery maintenance.
  - Increase the frequency of battery maintenance inspection to gain better control of batteries in a poor state.
  - Consider the installation of battery chargers with temperature sensors.

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