



FUELS INDUSTRY
Association of South Africa

LEARNING FROM INCIDENT (LFI) – BATTERY FAILURE

2024



INCIDENT DESCRIPTION

- On the 17th of April, the truck failed to start which then prompted the senior diesel mechanic to consider charging the batteries. At around 07:00, senior diesel mechanic, took two batteries to the battery cage to charge both batteries. Prior to charging he tested the voltage in the batteries whereby he determined that battery 1 had 10,5 volts and battery 2 (Oxide) had 10 volts. He adjusted the battery charger on 24 volts to charge the batteries.
- At approximately 08:45 the senior diesel mechanic heard an explosion sound coming from the battery charging station at the workshop. Upon arrival he noticed that one battery (Oxide battery that had 10 volts) was damaged, he immediately switched off the plug and then unplugged the battery charger. Batteries were disconnected and incident reported.
- The battery is called self-maintenance battery with a paper sticker which states that the battery must not be opened to check battery water.



INCIDENT ROOT CAUSE

- The investigation team opened one battery that was in the battery cage and discovered that the battery water was very low, and the battery cells were dry.



Battery 1 –
10,5 volts

Battery 2
(Oxide) -10
volts

Findings:

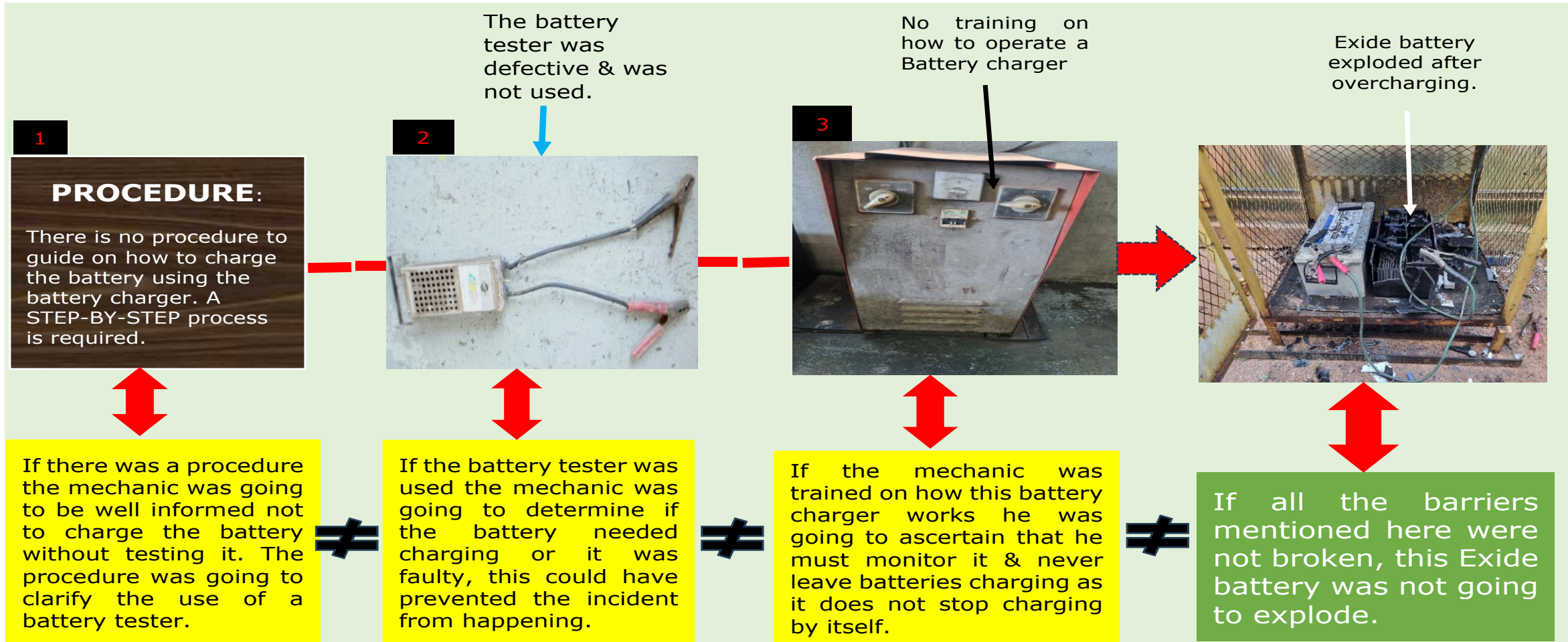
- Battery 1 was at 10,5 voltage prior charge & battery 2 was at 10 voltage.
- The quick charge machine does not provide any indication when the battery is fully charged, therefore reliant on the mechanic to stop and assess if it is fully charged.
- The battery had been charging for 1 hour 45 minutes prior to exploding.
- There is no procedure for charging the battery at the workshop.**
- Battery/load tester was not utilized to ascertain if the battery could still be charged, or it needed to be discarded. The equipment was not functional on the day of the incident.**
- Senior Diesel Mechanic was not trained on the operation of the battery charger as he was assumed competent by trade.



Battery
charger was
set at 24 volts
to charge two
batteries



INCIDENT ROOT CAUSE





INCIDENT LEARNINGS

1

PROCEDURE

- Ensure that there is a procedure outlining the steps on how to charge a battery safely.
- Never commence with any work if you are unsure of how to do it. Ensure that you follow the process as outlined in the procedure.

2

Battery tester



- DO NOT start any work if any critical equipment is defective.
- Report any defective equipment to your supervisors.
- Check the functionality of every equipment before commencing with any work.
- Equipment to be tested and validated, fit for purpose.

3

Battery charger



- Every employee must be trained on how to operate any safety critical equipment that they are using to avoid incidents.
- Knowledge is POWER, incidents will continue to happen if employees are not trained on how to use equipment at their disposal.

All battery related equipment within workshops were checked for replacement, upgrades if required and accuracy.



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Thank You

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