

Dropped load and failed chain

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A chain link failed, causing a load of over 260 kg to fall 1.5 m to deck.

What happened?

The incident occurred during transfer of a bundle of scrap cable, when a chain link snapped causing the load to fall the last 1.5 m to deck.

The load weight was estimated to be between 260 and 390 kg. The failed chain link was approximately 10.5 m from the hook.

As per correct lifting practices, no people were near the load during the lift.

There were no injuries and no damage.

IOGP Life Saving Rules:



Safe mechanical lifting





Original link



Link after break load testing



What went wrong?

Our member's investigation noted the following:

- The most recent inspection of the chain hoist was 3 months prior this incident.
- At the time of the occurrence, the chain link that failed was in the vertical plane and mid-air – the failure was unexpected and not caused by any torque, friction, tension or bending.
- The chain was at approximately 12% of its theoretical lifetime. Post-incident break load testing showed an actual break load of the chain of 3400 kg. Metallurgic and fracture investigation were conducted on the actual chain.
- The failed link showed to have had an external impact on the weld side, which caused weakening of the structure by approximately 90%. This caused a failure mechanism different from normal overload breaking.

What lessons were learned?

- Regular visual inspections of your lifting gear.
- Be aware that any external impacts on lifting gear may have a negative impact on its strength.
- Any damage spotted on lifting equipment should be reported and when necessary, such equipment quarantined and re-inspected.

Members may wish to refer to:

- Hyperbaric lifeboat emergency lifting chain link failure
- Load chain failure owing to corrosion [UK Step Change in Safety]
- Near-miss: Broken chain on sling of personnel lifting basket

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