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.

IOGP Life Saving Rules:

Safe mechanical lifting

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.

Original link

Link after break load testing

Failed link from incident

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.

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