Fatal 5 - Lifting eyebolt failure

WHAT HAPPENED

A telehandler with a lifting attachment was being used to lift a motor and gearbox out of service on a sand plant in a quarry. The lifting chain was attached to a lifting eyebolt on top of the motor.

When the motor and gearbox were lifted the eyebolt failed (snapped off at the collar) and the load fell 750mm onto the plant walkway.

No one was hurt.

Key findings

The motor shaft was seized onto the gearbox preventing the two items being split and lifted separately.

The lifting eyebolt was designed for lifting the motor only, with a safe working load of 300kgs. The combined weight of the motor and gearbox was 400kgs (eyebolt/load was therefore 100kgs overloaded).

The weight of the gearbox offset the load, preventing a balanced vertical lift and creating lateral shear force on the eyebolt. The eyebolt is designed for lifting the motor vertically.

The use of the telehandler also limited lifting options available.

The person responsible for designing the lift had not adequately assessed it and/or made suitable changes when conditions changed (i.e. when the motor and gear box could not be separated in situ)

Sheared eyebolt

Motor and gearbox (eyebolt socket on motor)

LEARNING POINTS / ACTIONS TAKEN

- All lifting operations must be properly planned by a competent person, appropriately supervised and carried out in a safe manner – in accordance with LOLER Regulations – Regulation 8

- The use of a mobile crane and/or alternative lifting attachments (slings, etc.) should be considered when developing a Lift Plan.

- **NEVER** exceed the safe working load of lifting equipment. If something changes during the job – remember to **STOP** and reassess the risks.

LOCATION:	**QUARRY**	**ALERT STATUS:**	**Normal**
ACTIVITY:	**LIFTING**	**DATE ISSUED:**	**27/01/2022 11:42:49**
SUB ACTIVITY:	**NO SUB ACTIVITY AVAILABLE**	**INCIDENT No:**	**03604**