

Shared Learning

COSTAIN
The Thameslink Programme

 Issue Date: 7th June 2017 - For further info contact sharon.fink@networkrail.co.uk

Issue Number: TLP 074
Title: MEWP Wheel Detachment

Overview of Event:

A wheel detached from a Genie S32D scissor lift. Whilst the scissor lift was travelling across the Tooley Street vehicle access route, the wheel parted company with the axle. The machine was being driven with the platform in the fully lowered position. The machine was being used to carry out the facade works along Tooley St. There were no injuries to the Operator or other personnel.

General Key Messages:

- Plant on site must have the appropriate examinations and inspections undertaken at the specified intervals
- Operators must make sure they carry out pre-use checks as per their company policy

Actions Taken As a Result of the Investigations:

- Nationwide Technical Bulletin for GS32 & GS26 scissor lifts to check Hub Bolt Torque settings and plate/castellated nut wear. The removal of the hub will include a Woodruff key inspection. Any anomalies they will be replaced / reported.
- Awareness campaign & safety alert on further scrutiny of movement from wheels on scissor lifts and retaining plates for all Nationwide engineers. Information passed to Genie/Terex.
- The Nationwide computerised maintenance system is being assessed to ascertain if alerts can be set up when items such as kingpins are replaced out of scheduled times to help highlight a deeper issue.
- The retaining plate was a design change from the manufacturers Genie/Terex from the original split pin design. To be assessed post incident and split pins should be replaced as a further measure to prevent a reoccurrence.

Photo of Event :

Description	Kingpin Assembly Pins x 2 that were Incorrectly Identified During Pre Hire Inspections as Worn and Replaced 3 times
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Causes:

Immediate Cause – The stripping of the threads on the castellated retaining nut allowed the wheel to become detached as the castellated nut failed to hold the wheel on the axle. The retaining plate had become worn from the key/keyway movement on the axle allowing the castellated nut to move the subsequent continual movement clockwise and anti-clockwise caused the stripping of the threads.

Underlying Causes –

- **Maintenance Management:** The engineers completing the pre hire inspections (PHI) did not identify the root cause of the movement identified during the inspection they mistakenly identified the kingpins (a common fault on this type of scissor lift) as the cause of the movement in the wheel/stub axle arrangement.
- **Communication:** There was a failure to adequately identify and question why the kingpins had been replaced 3 times in 6 months or review previous maintenance reports that 3 replacements of the kingpins had been completed.
- **Design:** The castellated nut was not secured with a split pin through the shaft of the stub axle, the design had been changed by the manufacturer Genie/Terex in favour of the fixing plate arrangement.