

**Every employee and contractor, working for Northern Powergrid, should go home at the end of each shift uninjured and in good health after a productive days work**

## **Loose Wheel Nuts and Wheel Detachment**

Northern Powergrid Toyota Hilux vehicles have experienced two separate incidents of wheel nuts shearing on the rear near side (passenger) wheel.

On 18<sup>th</sup> May 2016, a Hilux, fitted with a Socage platform suffered a complete wheel detachment whilst travelling at 60mph in the centre lane of the M62 motorway. The driver brought the vehicle to a safe and controlled stop on the hard shoulder without involving other vehicles. There were no injuries or damage to other vehicles. Highways England attended the scene and carried out a rolling road block while the detached wheel was removed from the carriageway.

A second incident occurred in the early hours of Friday 3<sup>rd</sup> June 2016 and was discovered while a Linesman's winch specification Hilux was being driven about 50mph along the A171 from Guisborough towards Whitby, a single carriageway rural road. The driver, having heard an unusual noise from the rear of the vehicle, stopped safely and discovered that a number of wheel studs had sheared off. In this case, the wheel was still attached to the vehicle. Again, nobody was injured and no other vehicles were involved.

Both incidents are being investigated and the second vehicle has also been subject to an independent examination by a senior mechanical engineer from the Freight Transport Association.

The investigations are taking into account a number of factors including service and maintenance histories, maintenance working practices, daily vehicle safety checks and defect reporting. In both cases, two adjacent wheel nuts had become loose with the remaining four wheel studs having sheared off. The reasons for the wheel nuts becoming loose are still subject to investigation. There is nothing to indicate that the manner of driving in either of these cases was contributory.

Full or partial wheel detachment occurs infrequently within the light commercial vehicle sector, i.e. goods vehicles not exceeding 3.5 tonnes gross vehicle weight.

Transport industry sources indicate that when it does happen it is likely to be



associated with the rear near side wheel and particularly in vehicles that operate towards the upper end of their weight limit, even though vehicles are rigorously tested and approved to operate at these limits.

- There are 44 Toyota Hilux vehicles on the Northern Powergrid/VLS fleet
- 15 are fitted with Socage platforms.
- Immediately following the first incident, VLS arranged an immediate inspection of all Toyota Hilux vehicles fitted with Socage platforms. The purpose of the inspection was to ensure that all wheel nuts were present and were tightened to the manufacturer's specified torque settings.
- As an additional preventative maintenance measure going forward VLS have also changed their own working practices by implementing a double-torque process which is seen as best practice in the medium and heavy commercial sectors. This process involves tightening wheel nuts to the manufacturers specified torque settings and then leaving the vehicle for a period of time before re-checking the torque settings after any settlement may have occurred.
- **VLS have also started to fit wheel nut indicator flags to light commercial vehicles where it is practical to do so.**
- **Wheel nut indicator flags are designed to help drivers to identify missing or loose wheel nuts during daily vehicle safety checks.**

After the second incident, all drivers of Toyota Hilux vehicles were briefed as soon as was reasonably practicable to increase vigilance regarding daily vehicle safety checks. They were also briefed to complete a visual check of all wheels before every journey to confirm that wheel nuts were fitted and were tight. The visual check could be supplemented by a finger tightness check as necessary.

The inspection of vehicles was also extended to include all Toyota Hilux vehicles on the Northern Powergrid/VLS fleet. It is comforting to reveal that by close of play on Monday 13<sup>th</sup> June, all available Toyota Hilux vehicles had been inspected and no other loose or missing wheel nuts found. The double-torque process was used and wheel nut indicator flags fitted.

As part of a wider follow up, all Toyota Hilux vehicles on the Northern Powergrid/VLS fleet will be inspected again in July after 4 to 6 to six weeks have elapsed. This is to ensure that all wheel nuts remain torqued to manufacturer's specification and that the new maintenance practices are working as intended.

In addition, all commercial vehicles in the Northern Powergrid/VLS fleet with a gross weight not exceeding 3.5 tonnes will be inspected over a 16 week period. A risk based approach has been agreed with VLS so initially those vehicles that are known to operate at the upper end of the 3.5 tonne weight limit, i.e. Ford Transit vans and Land Rovers will be inspected first. Wheel nuts will be checked using the double-torque process and wheel nut indicator flags fitted. Industry guidance is being sought about the necessity and viability of fitting wheel nut indicator flags to vans at the lighter end of the sector, i.e. Vauxhall Vivaros, Ford Transit Connects, Vauxhall Corsa vans, Fiat Doblos, Ford Couriers, Vauxhall Combos etc., vehicles that are typically fitted with plastic wheel trims that cover the wheel rims.

Although using the vehicles in excess of the vehicle gross weights is not considered to be a factor in the two incidents highlighted, drivers should be reminded that they have a responsibility to ensure that any loads carried do not exceed the gross vehicle weight of the vehicle thereby placing greater stresses on the wheels and wheel nuts/studs.

**Finally, drivers must carry out a daily vehicle safety check of every fleet vehicle they drive and report any defects using the "Drivers Daily Vehicle Check and Defect Report" book, a copy of which should be in every fleet vehicle.**

**When a daily vehicle safety check has been completed, the driver must record this fact by pressing the green button fitted as part of the vehicle telematics installation. To assist drivers how to carry out a daily safety vehicle check, a handy pocket sized guide about what should be checked is being developed for issue to all drivers.**