



Coupling maintenance

A fifth wheel coupling is one of the most important components on a truck – yet is probably the least well maintained. But Dan Gilkes finds out this is changing

A poorly maintained fifth wheel can result in wear to both truck and trailer, and a bumpy, uncomfortable ride for the driver. In the worst case, it can lead to a dropped trailer, which could cause real damage – even serious injury.

In 2007, research undertaken by coupling supplier Jost found that over 43% of UK hauliers believed dropped trailers to be a major issue, with 81% admitting their company had experienced the problem. Driver error was thought to be the main cause, although 16% conceded it might be down to faulty equipment involving the fifth wheel or the trailer king pin. Not surprisingly, more than 60% said they thought that introducing safety sensors would be a good idea. However, the survey didn't reveal how many would be prepared to pay for them.

That said, Jost does offer an electronic checking system that, these days, operates wirelessly to a button on the dash and this is now on a small number of UK trucks. However, the easiest way to cut the chance of a dropped trailer is to implement a regular maintenance regime for the fifth wheel.

To find out what is involved, *Transport Engineer* sat in on a training session at Scania's National Training Centre, near Loughborough. The course was run by Jost, but the firm says it will happily run similar training for fleet operators, dealers and manufacturers, usually at little or no cost.

While most regular maintenance should be



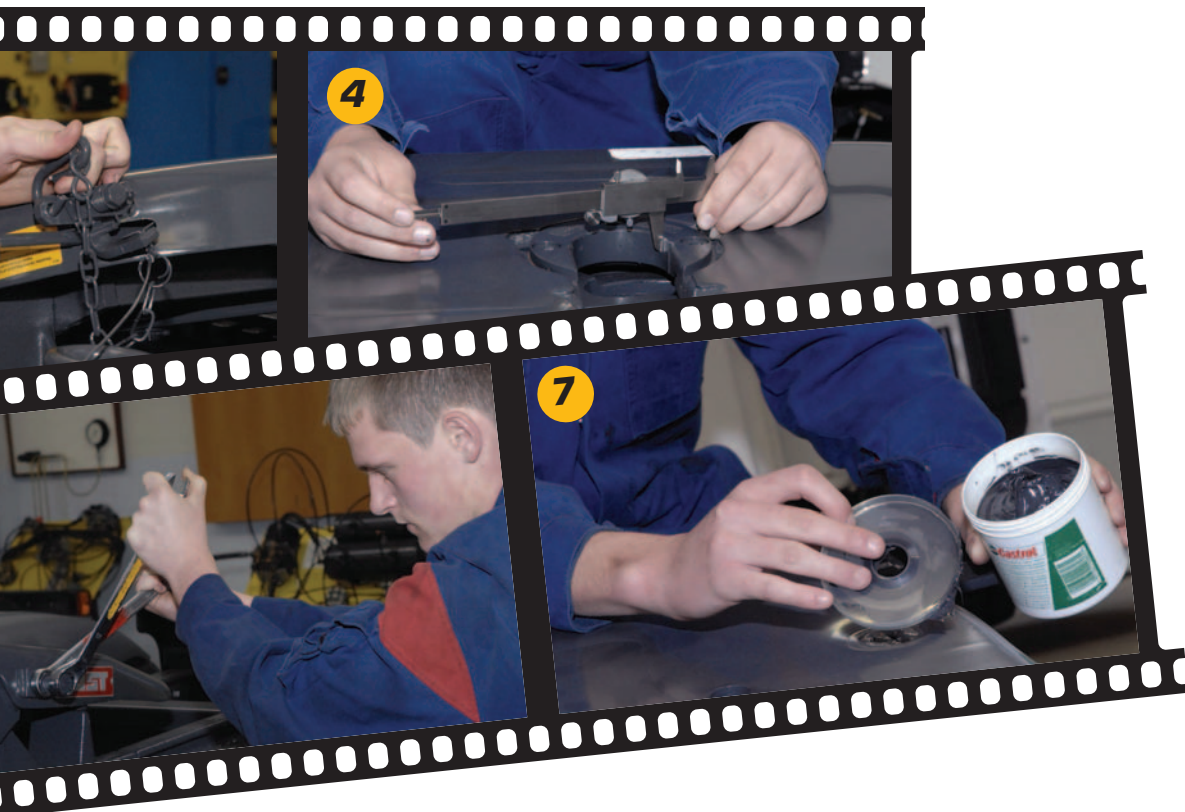
carried out as part of the six-weekly vehicle inspection, drivers should also undertake a visual check of the fifth wheel coupling every day. This should involve looking for adequate lubrication, but also ensuring the locking mechanism is working properly and that the securing dog clip is in place.

Meanwhile, at the six-weekly inspection, the fifth wheel should be properly cleaned, removing the covering of grease that will by then contain road grit and other contamination. A fifth wheel has two metal surfaces rubbing together and old lubricant can resemble grinding paste, especially if the truck is used in a sandy quarry environment.

Once clean, the fifth wheel should be subjected to a visual check again – the technician looking at all moving parts, locking pins, mounting bolts and the coupling wear face. Particular points to watch for include cracking of the plate, and bent handles and adjuster rods.

Next is a function check. Technicians should remove the dog clip and check that the locking pin mechanism works smoothly and fully. It is useful to have a test king pin available, so the mechanism can be seen working, without coupling the trailer.

If everything is in order, the next stage is to check for wear. The lock jaw and the wearing ring can both be measured with a vernier calliper. The wearing ring on the most common Jost JSK36D coupling has a minimum width of 30.5mm, while the lock jaw should have at least 17.5mm of metal.



The seven-stage fifth wheel maintenance programme

- 1 Clean the fifth wheel
- 2 Carry out a visual check
- 3 Do a function check
- 4 Check for wear and measure individual components
- 5 Ensure mounting bolts and wear ring bolts are at the correct torque
- 6 Adjust the locking mechanism if necessary
- 7 Apply correct lubricant to the coupling plate, wearing ring and locking mechanism

A bar should be placed underneath the fifth wheel to check for lift in the mounting bushes. If there is more than 5mm of lift, change the mounting bushes.

A torque wrench, as opposed to a hammer, is recommended to check the tightness of the bolts securing the wearing ring while technicians should also check mounting bolt torque on a regular basis.

If required, the locking bar can also be adjusted to ensure that there is minimal movement within the coupling. To do this, with the trailer uncoupled, undo the locking nut and wind the adjuster screw out around 20 turns. Couple the fifth wheel to a test king pin or a trailer, if preferred, and lightly tap the operating handle towards the coupling. Wind in the adjusting screw until the handle just starts to move, as the adjuster screw touches the nose of the

locking bar. At that point, turn the screw a further 1.5 turns and then tighten the locking nut. You can then check fore and aft play in the king pin. If it is more than 0.3mm, then the wearing ring and lock jaw should be checked and possibly replaced.

Finally, apply fresh lubrication to the outer edges of the fifth wheel plate, and around the wearing ring and mechanism. Also, lubricate the adjuster screw and all of the pivot points underneath the fifth wheel. If the coupling is a slider, then you should also apply grease to the locking teeth and sliding mechanism.

While this might sound like a lot of work, it is actually a fairly quick process. As with all preventive maintenance, though, in the long run it could save you far more than the time it takes. **TE**

Scania's training timetable

The Scania Training Centre might have opened in 2000, but the manufacturer had been offering its dealers and customers a training facility since 1995 in the UK.

As the network expanded, the requirement for training of all sorts, not just technician training, grew – leading to its eventual expansion. Now catering for truck, bus, industrial and, from this year, marine products, the facility takes in 60 apprentices a year from the dealer network and offers upwards of 9,000 training days. Of that number, 7,000 are taken by the dealer network and 2,000 days of training are provided to customers.

Jost first approached Scania in 2008, offering to run courses as a way of expanding knowledge and improving safety throughout the industry. Initially, the training was provided to senior technicians, but now it has worked right through to the apprentices at the centre.

In 2008, 120 technicians attended the Jost course, while more than 400 took on board fifth wheel training during technical update courses in 2009. Jost has also carried out 'train the trainer' courses with Scania, so that the firm can provide its own updates for dealer technicians.