

# Accident waiting

**Couplings are hardly high-tech fitments, but, given their function, they qualify as safety-critical. Brian Tinham examines growing concerns about fifth wheel and drawbar maintenance and inspection**

It's almost four years since Colin Barge, then southern sales manager for drawbar equipment specialist VBG, wrote to Transport Engineer over concerns about growing complacency around maintenance and inspection of trailer couplings. Worryingly, despite incidents and near misses in the intervening years, it appears that little has changed.

"Many [operators] appear to think that couplings are fit-and-forget items," he wrote, "instead of safety critical, requiring inspection and servicing at regular intervals." He also pointed to problems with R&M (repair and maintenance) contractors assuming that ancillary items, including couplings, were the operators' responsibility – and vice versa.

"Sometimes they are simply ignored, because they are not listed on an inspector's check list," he said.

Just as important, Barge also highlighted what might be regarded as systemic failures even within VOSA (the Vehicle and Operator Services Agency), with the agency only testing trailer couplings' wear by "applying the trailer parking brake and gently shunting the truck back and forth". If the pin was still three quarters' original thickness, that was considered a pass, he observed.

Others have since noted that there appears to be little or no check of visual secondary lock indicators on drawbar couplings, too. And the same applies to fifth wheels, with little attention to release levers, operating handles etc (except at roadside checks) – and certainly not the condition of fifth wheel mounting plates.

## Testing times

Transport engineers may be interested to know – if they don't already – that, as far as VOSA is concerned, little has changed. Unless tractor units and trailers are presented separately, proper checks for wear on, for example, fifth wheel jaws, mounting plates and safety locks or, for that matter, drawing hitches, bars, hooks, fifth wheel kingpins etc, don't happen. It's a curious message to send out, given the clear safety implications, but, plainly, there's relatively little danger of trucks or trailers failing their MOTs, due to hidden coupling problems.



So that's fine, isn't it? Well, no: it simply means that no one should rely on MOT testing as the last backstop of safety when it comes to checking couplings' fitness for purpose – and hence also their trailers' security in transit.

And that, in turn, means the onus is on transport managers to ensure that, whoever is responsible for maintenance and inspection, they are not overlooking the vehicle's couplings.

This matters. Colin Barge's comments back in 2009 should surely strike a chord with some operators today. Transport Engineer is aware of at least one recent report, from an unnamed tanker trailer operator's fleet engineer, concerning corrosion problems detected on fifth wheel kingpins. How many others might be similarly affected – or worse?

David Deri, technical director at couplings specialist Jost, says it's very difficult to know. "All I can say is that it's very unusual to see couplings four years' old that have been adjusted correctly. It's a five-minute job with an adjuster stud, if you know what you're doing. It takes a little longer on drawbar

### Inspection and maintenance

Given that couplings are safety-critical items, they should be visually inspected regularly as part of the driver's daily walk-around check. Indeed, drivers should also be alert to changes in the performance of couplings in use. That said, they also need routine maintenance to keep them in serviceable condition.

"Couplings should be checked and serviced, along with the rest of the truck, every six to eight weeks," states Jost technical director David Deri. "That means lubrication and visual inspection – as a minimum, checking that no bends or cracks are evident and that all the bolts holding the coupling onto the tractor unit are present. There should also be a functional test, ideally using a hand-held test kingpin. Check that the coupling opens and closes correctly, and that the safety features are fully effective." And that includes checking that the dog clip or karabiner, used to ensure the lock is closed correctly, is in place and working.

Fontaine Fifth Wheel sales manager Steve Marshall agrees, adding that technicians will also need a kingpin gauge to test the kingpin. "We offer a guide to where [the kingpin] should be on the jaw before it has to be replaced," he says. And he adds: "We also have a workshop poster that shows you the dimensions of the jaw and the diameter when it needs replacing. It also shows how to adjust the fifth wheel, the torque rates, grease etc."

As for the fifth wheel and mounting plate, Jost's recommendation is periodic thorough degreasing and cleaning of the surface and underside. Technicians need to remove any grease build-up within and around the jaw, throat and pivot points. Corrosion shouldn't be a problem, given that all reputable coupling manufacturers powder coat their ramps. But, again, regular inspection is recommended.

It's a similar story with drawbar couplings – with the added



concern that, since they are under the rear axle and out of the way, it's a case of 'out of sight, out of mind'. VBG recommends visually inspecting coupling equipment at least weekly, and more frequently where vehicles have been overloaded, looking for cracks, corrosion and deformation. If damage is evident, then – since welding and straightening are not allowed – parts must be replaced.

Beyond that, maintenance is about regular (again, weekly) cleaning and lubrication, with retightening at 2,500km after installation. Thereafter, VBG states that service intervals depend on trailer type, loads, roads and the environment – although it makes sense to co-ordinate the work with other vehicle inspections, say, every 60,000–90,000km. On top of that, couplings should be dismantled and examined annually for wear, corrosion, cracks or deformation.

### The pull test

Too many in the transport industry are reliant on assumptions, luck and, oh, of course, the so-called 'pull test' to check that couplings are in good working order and that trailers are hitched safely. And the latter is truly frightening.

As Howard Ostle, UK sales and marketing manager at VBG, puts it: "If the driver couples his trailer using only the primary lock on a drawbar coupling, and then executes the 'pull test', all that proves is that it's in position and holding the pin. They must also make sure the secondary lock is fully closed and flush, with the indicator button [or similar] in position. That's the positive lock – the sliding bolt that moves across the top of the coupling. If it's not engaged, then they're relying entirely on the first lock, which only holds the pin captive under spring tension."

In short, anyone using the 'pull test' and believing it's proof of coupling has an entirely false sense of security. The test may appear fine, but, without the secondary lock in place, if the combination is driven over uneven terrain and the pin moves far enough, it may well come adrift. Then you have a very dangerous trailer detachment.

couplings, but this is nothing onerous. And there are workshop service guides that show technicians what to do – but still it's not happening."

"There may be an element of not knowing what

they're supposed to do – and, if they don't touch it, it's not their fault," says Michael Johnson, Jost GB sales director. "That's in spite of the work we and others in the industry do, such as training operators and service providers on how they should service fifth wheels, drawbar couplings, landing legs etc."

Deri adds that the condition of fifth wheels – typically caked in grease – is bound to put some technicians off getting too hands-on. "There will be a tick box [on the inspection or maintenance sheet], but it's one among many. And with the pressure on to get vehicles back on the road, it probably keeps on getting overlooked."

That, of course, is a poor excuse. Couplings should be regarded as safety-critical fitments and so treated with the same respect as equipment such as brakes, suspension and steering systems. "I'm not so worried about the adjustment aspect," comments Deri. "If they're out slightly, that will simply accelerate wear on the kingpin and jaw mechanism, and the driver should notice an increasingly uncomfortable ride, due to the play.

"But the real worry is when they're not functioning correctly. For example, if the release lever or operating handle on a fifth wheel is bent – which is easily done, if the driver clouts them with the kingpin when he's trying to couple."

Unchecked, these are accidents that are waiting to happen. 