ROLLING ALONG

The brake testing of trailers on a rolling road comes with its own procedures and pitfalls, some of which could easily catch the unwary operator out. Lucy Radley looks at the best way to prepare and present these vehicles, in order to maximise their chances of success

The best place to start any exploration of compliance-related subjects is with DVSA's own guidance, the vast majority of which is available online. In this case, the relevant document is 'Heavy vehicle brake test: best practice', *www.is.gd/axulix*, last updated in April 2016. But while this provides an excellent overview of how to meet the legal requirements, it doesn't cover some of the more practical sides of preparation.

For that, we need someone who works with roller brake testers (RBTs) every day. Luke Simmons, brake tester engineer with heavy duty workshop equipment supplier Totalkare, spends most of his time installing and servicing brake testers in the field, as well as advising operators on how best to use them. The first point he makes is that vehicles shouldn't be taken to MOT without a pre-test – remember, failures count against the O-licence. In fact, in an ideal world, DVSA prefers to see roller brake testing carried out at every safety inspection, and many of the brake testers Simmons installs are for operators who are seeking to demonstrate they comply in this area.

But regardless of when and where a test is being undertaken, the basic preparation should be the same. "To start with, the tyres need to be good and the tyre pressures correct," Simmons tells us. "Then it's checking load-sensing valve adjustments, checking the air pressures on the braking system, and that the ABS is working correctly."

This ties in with DVSA guidance, which advises that a satisfactory brake result should be achievable using the load-sensing valve settings at the manufacturer's pre-set limit. "Altering the LSV settings can lead to over-braking...which is a potential road safety hazard," it says.

Another thing to consider is EBS, although this is mainly relevant to those operators conducting their own roller brake testing. There are several systems in use currently, and DVSA's HGV inspection manual (*www.is.gd/ulikiq*) gives full advice on correct testing procedures for these (see Section 71- Service Brake Performance). For simple preparation purposes, however, the most important thing is that the tractor unit presented with the trailer must be compatible, with no dash warning lights showing.

Think about things which may unnecessarily affect a test result. DVSA itself advises against steam cleaning of vehicles prior to brake test, for obvious reasons. But what about when brakes have been relined? "All brakes should be bedded in after relining, but it is difficult to give an exact period," says Brian Beacon, director of RBT equipment specialists VL Test Systems. "Obviously, the more they are used [the better], and if the vehicle is loaded then that will shorten the time." He also reminds operators to check tyre pressures, and consider other factors, such as whether brakes are hot or cold when a trailer is being taken to test. (For more advice to operators about MOT brake tests, see also *www.is.gd/omejir*).

TO LOAD OR NOT TO LOAD

Next comes the loading – or not – of trailers. Normally, all vehicles should be loaded to at least 65% of design axle weight (DAW), but there is one prevalent type that is exempt from this requirement and can be tested unladen: tri-axle trailers. Brian Beacon observes: "There is a lot of contention regarding this, and even at this moment in time the traffic commissioners are looking at the whole ethic of passing vehicles on

the 'locks rule'. My own view," he adds, "is there is no way to guarantee that if it passes unladen it will pass when fully-laden."

Luke Simmons is also wary of this rule about tri-axle trailers. "To pass, it must achieve a brake force of 1,000kgF across that axle, and a lock at each wheel station," he explains – this is the 'locks rule' Simmons mentions above. "If it doesn't lock on both stations, it has to achieve another 600kgF minimum brake force across the axle." The anomaly arises, he feels, when you look at DVSA's advice for safety inspections.

In the Guide To Maintaining Roadworthiness, section 5.3 strongly advises use of a calibrated RBT at each safety inspection. It then goes on to say: "Brake testing should be undertaken with the vehicle or trailer in a laden condition in order to achieve the most meaningful results", although it does accept that "basic design limitations or restriction caused by the type of cargo normally carried" may make this impossible. "So, for me, how you can test all year loaded and then at MOT unloaded, I don't know," Simmons says.

The unladen tri-axle testing option only applies to semi-trailers, and is granted on the grounds it can be difficult to provide the level of loading needed for a tri-axle trailer, whereas a drawbar wouldn't need anything like the same amount of weight to reach 65% DAW.

There is another option, however, and that's load simulation, which may be able to be provided at the testing site. The classic version of this is the 'nodding donkey', which is wheeled to the back of a vehicle where an arm then uses hydraulic pressure to apply the load. There are other methods too, but none of them are ideal.

"With 'pull down' simulation, for example, chains or straps are located over the axle or chassis, and hydraulic cylinders pull down to impose the load," Brian Beacon states. "But if you pull on the axle you will not activate the load-sensing valve, so not achieve the 65%. The alternative is to pull from the chassis," he continues, "but as well as being difficult to find a connection point, you may risk damaging the body, especially if it is aluminium or cannot take a point load of up to 12 tonnes."

There is also a solution which involves lifting the vehicle. "Again this is unlikely to give you the required 65%, and can also fail to trigger the load-sensing valve, dependent on its location," Beacon warns. With this in mind, it's probably best to stick with DVSA's recommendation: "If you can load it, then do so."

RBT CARE AND MAINTENANCE

Finally, if an operator has its own brake tester, as well as making sure the rollers are well-gritted and clean, it is vital that servicing and calibration is performed as the manufacturer instructs. "We advise calibration, servicing and lubrication should be done every six months," Luke Simmons says. Service contracts are available from Totalkare to cover this.

Brian Beacon agrees, and expands a little. "If you are an ATF, then twice a year is the legal requirement for calibration, although it can be done as little as once a year or, in a busy lane, four times a year," he says. "It is important that the equipment is not just calibrated; it does need to be fully serviced at the same time." VLT's equipment will actually self-calibrate when the RBT is turned on, and should it go out of calibration it will inform the user and not be operable until recalibrated. "However, even with this benefit," Beacon adds, "we still recommend full service and calibration at least once a year, dependent on usage." TE