

## Alcaline hits the road with MaxiTrailer tyres

European haulage firm Alcaline has changed its tyre policy across the entire fleet, having completed year-long trials of Michelin's X One MaxiTrailers on the trunk roads between Ashford, Kent, and Italy.

Alcaline fleet engineer Mick Richards says he organised the trials because trailers were experiencing so many damaged tyres, even where fitted as original equipment – and often within six months. He agrees that the unforgiving entrance onto the Eurotunnel shuttle wagons doesn't help tyres, but claims the casing failures and heavy wear on side walls and edges were exceptional.

Richards says a set of the new Michelin 455/45s was fitted to one of its new Schmitz Cargobull tri-axle trailers and compared against Dunlop tyres, fitted from new to other curtainsiders. "We got a test set first, because they're a bit bigger than the Dunlops and we thought it might be a bit tight getting them on. But the clearance was fine and we had no problems at all, even where the trailer floorboard bolts come through," he says.

By the end of the trial, the MaxiTrailers had covered 176,569km with no damage



and still had 9mm of tread remaining, which, Richards reckons, meant another 78,000km life before re-grooving, in-line with Michelin's 'four lives' policy.

Since then, says Richards, seven of Alcaline's new Schmitz Cargobull tri-axle curtainsiders have been fitted with the MaxiTrailer tyres, and the remainder will be fitted when the originals wear out or fail. "These are the best tyres we've ever bought," he confirms. "There's almost no

difference in price and the performance is far better," says Richards.

Michelin says that's because its 455/45 R 22.5 X One MaxiTrailers were designed to deliver up to 50% more mileage than its 385/65 R 22.5 XTE2 tyre, the secret being its InfiniCoil technology, which uses a 400m steel cord wrapped continuously around the crown of the tyre for increased robustness. The tread band is also 120mm wider and has 35% more usable rubber.

Richards says that doesn't just cut wear: it also lowers rolling resistance – improving fuel efficiencies – while better shock absorption is helping to cut trailer maintenance costs. "Overall the trial has been such a success that we have adopted an all-Michelin policy for the fleet and are specifying X One MaxiTrailer tyres as original equipment on all new trailer purchases."

Michelin also claims that, when fitted to new conventional or mega volume trailers, its tyres can increase load volume by between five and nine cubic metres, because of their low profile. The firm also suggests that the tyres' increased footprint means greater stability, and so improved safety.

## Magnetic fuel intervention trials in detail

Contrary to received wisdom around fuel-saving interventions in general, and magnetic devices in particular, Carmarthenshire County Council is reporting remarkable success (Transport Engineer, January 2010, page 4).

This is worth exploring carefully, given the failure to date of so many trials to show statistically significant improvement.

Carmarthenshire's trials, managed by fleet manager Andy Elkin, involved using Magno-Flos and ran from January to June last year on 26 vehicles. Elkin cites Vauxhall Astravans, Citroën Berlingo and Mercedes Sprinter 511 vans, Ford Transit 350 tippers and 280 panel vans, Vauxhall Vivaro panel vans, Dennis Eagle and Volvo refuse trucks and Mercedes Axors.

Looking first at the methodology, Elkin says the trial used mpg data direct from the council's own Triscan fuel management system (averaging to allow for driver issues, such as inaccurate odometer readings), compared against its monthly reports on vehicle and driver performance. He accepts that similar vehicles could (and did) produce



differing fuel performances – due to factors such as weather, type of route, terrain, driving and loads carried – but insists that the trials targeted vehicles used on the same routes and operated by the same drivers.

"All vehicles selected for the trials were fitted with the Magno-Flo without the knowledge of the driver," explains Elkin. "In the case of one vehicle, a Dennis Eagle 26 tonne twin compaction refuse vehicle, we ran it with the unit for six weeks, took it off for another five weeks and then refitted it a second time. After the first six weeks, it showed a 12.2% improvement. That went

back down hill when we took the product off, and then rose to 10.24% when we put it back again."

Interestingly, he also cites oil tests conducted by the specialist, Motion. "Three 57 and 58 plate Dennis Eagles were tested for total per cent insolubles, and we found carbon build-up with the Magno-Flo fitted was half that of the vehicles without the unit."

Elkin concedes that Magno-Flo didn't work effectively on everything: "Astras and Berlingos were not brilliant at 0.5%." He believes that one of the causes could be pressure through the pump, which "knocks out any effect the magnets can have on realigning the fuel molecules".

However, there is no denying his results on other vehicles – in particular Transit 350 tippers and Dennis Eagles. For the former, the trials showed a 10.01% gain, saving 103.5 litres per annum – meaning a payback of nine months on the unit's £65 for sub 7.5 tonners. For the Eagles, the figures were 10.32%, saving 1,485 litres and yielding a payback of just three and a half months against the unit's £355 cost for trucks.



# Specifying specialist vehicles? Tap into VT

If you're wondering what to specify for a specialist vehicle, and how to go about it, it's worth talking to the man who heads up automotive engineering at the massive VT Group (formerly Vosper Thornycroft).

Steve Cobbold looks after the organisation's responsibilities for British Airways' ground support vehicles, while also supporting the New Dimension (National resilience Fire & Rescue equipment) contract.

He refers, for example, to extensions of lean operations at Heathrow Terminal 5, which mean that aircraft support vehicles are pulled from zones, rather than being assigned to aircraft. "So there are fewer vehicles and more pressure to keep as many of them available as possible," he explains. "And that, in turn, means extending service intervals, optimising maintenance intervention and going for reliability as the number one criterion when we specify vehicles and vehicle components."

In fact, Cobbold's bailiwick covers some 5,500 BA vehicles, of which around 3,000 are powered. On the New Dimension side, that includes fire fighting equipment, based on MAN chassis, while on the air support side, it's a mix of cargo delivery tractors, aircraft loaders, secure vehicles, electric baggage tugs and trailers, airport buses and vans.

"Gearing up for T5 involved helping BA to acquire around 1,000 vehicles," he explains, adding that some of the kit is straightforward, but for baggage trucks and cargo tractors it's a different ball game. "For T1 and T4, BA used a standard electric tug with a single motor and traction battery, but T5 is much more challenging. It has three buildings, with their own apron areas and taxi ways, and the only way parts can move from one to another is through tunnels. That means gradients, which are a big challenge for electric tugs required to pull a few tonnes of baggage."

Cobbold encouraged tug suppliers to provide prototypes for testing. "We worked with Millbrook to identify the topography of T5 so they could devise programs to simulate loads during a working day. Then we used its' rolling dynamometer rig to run the tests. It's not ground breaking, but without going to those lengths we couldn't have guaranteed in-service reliability. The Linde variants we eventually specified weren't even on the design table before we started this."

## Adapted dock handlers

It was a similar story with the cargo tractors, except the requirement was to replace Mulag and Douglas towing tractors, designed to pull a few tonnes of cargo 0.7km along the flat. "For T5 that distance could be 5.5km and, again, there were those gradients. Also, we wanted the units to travel much faster and to tow greater weights. In this case, we decided to look at RORO dock handling units and settled on the Terberg tractor, built in Utrecht. That's actually used for carrying trailers on a fifth wheel, whereas we needed a straight towbar for aircraft pallet trailers. So we replaced the fifth wheel with 3.5 tonnes of ballast to get the traction."

What about optimising maintenance? Cobbold says technicians have been running several programmes, one of which is oil testing, aimed at minimising the times equipment is hauled off to the workshops. "That makes a big difference. For example, we acquired 85 of the Terberg tractors, whereas in the past we might have run with an additional five to provide the maintenance float. Extending the oil change intervals helps, but you can only do that by monitoring oil."

Interestingly, Cobbold says that almost all vehicles that go anywhere near aircraft must have auto boxes, and that the preference is

for Allison (partly an accident of history, but also to minimise driver training and parts inventories), although some vehicles run with ZF or Voith. "Many of these vehicles have to approach aircraft directly, or interface with equipment that is itself in touch with the aircraft. So two-pedal operation and being able to inch forward are the only safe ways."

On that point, Cobbold warns transport engineers to think carefully when specifying auto gearboxes. "A few years ago, we needed some 18-tonne chassis cabs with powered roller bed floors for palletised cargo. Normally, we would specify Allison, but time was a problem and the supplier had chassis in stock with his own automated manual box. The problem was that when you selected reverse, the vehicle didn't move until the driver blipped the throttle. When you're reversing to touch an aircraft that's just not an option."

However, all the auto transmissions on his fleet have proved extremely reliable. "We have vehicles that are 15 years old, where the transmissions have never been out. Many have auxiliary drives and power take offs and, although the mileages are low, they are on intensive operations, running 1,000 to 2,000 operating hours a year for the baggage carriers and up to 3,000 for the Terbergs."

What about emissions? Clearly, European regulations don't apply off-road, but Cobbold explains that BA went for Euro 5 engines for its airport buses. "They only clock 20,000 to 30,000 miles a year, but they stand idling at air-side for a long time."

And there are BA's green credentials. "In many cases now we go for Deutz engines, because we believe they're ahead of the game on emissions. We've used them on the transfer transporters and cargo loaders. But we also use Mercedes Euro 5 engines, and the Terbergs came with Cummins B series."