

# Tread carefully



Buy new or go for retreads? There are several decisions to take around tyres, but many operators don't know the best path to tread. Keith Read talks to manufacturers for clarification



**T**yres, once considered responsible for significant and all-too-frequent and recurring dents in truck operators' slim profit margins, can today be among the keys to putting some meat back on the balance sheet. And it's chiefly down to technology and the policies of major tyre manufacturers – which appear, on the face of it, to make little commercial sense.

Nigel Sowerby, director of commercial vehicle tyre business at Goodyear Dunlop, is the first to admit that the role of commercial vehicle tyre makers is unusual. "Strange as it seems for a tyre manufacturer, our job is to sell fewer tyres to more fleets," he confirms. "We do that by first making sure they get the right tyre for the application and second that they have the best chance to last as long as possible."

Sowerby's approach is shared by Arthur Gregg and Bill Sharratt at Continental. Rivals they may be, but there is almost perfect harmony in their responses to this question and others, such as: with a mind-boggling array of tyres available, how can operators pick what's right for them? And how is technology helping operators drive down costs?

Gregg, Conti's commercial vehicle tyre sales and marketing director, has no doubt about the key decision operators must make. "Always choose a premium tyre," he says. "They've been fitted as original equipment, and gone through homologation and testing. And there are big differences between premium tyres and budget tyres – in the casing, in tyre life and in terms of fuel consumption."

His advice: "You might save fifty quid on a budget tyre, but its mileage performance will be much less." Gregg insists that fuel consumption will be worse and, at the end of the tyre's first life, the casing [residual value] will be smaller. On the casing value alone, operators stand to lose the theoretical savings from buying budget, he says.

Sharratt, Conti's product evaluation manager, is unequivocal: "When you look at the safety factors, a premium tyre has gone through all the tests that show stopping distance, directional stability, resistance to aquaplaning etc. Also, even if a premium tyre does slightly less mileage, fuel savings from its lower rolling resistance will far outweigh any savings you might think you've made by buying budget."

For Sharratt, the days of tyres being viewed as just black rubber should be long gone. "Today, fleet engineers have to consider the whole vehicle and its application – not just look at tyre life. They have to choose a tyre that is best for the whole operation. Using the right tyre can save 3–5% of a fuel bill, which is far more beneficial."

Gregg spells out the maths: "By choosing the right tyre, the saving on fuel costs can nearly wipe out the total tyre bill." He points to Conti's web-

based Fuel Calculator. "Operators can go in, enter their fleet and mileage expectations, and compare fuel consumptions with other premium brands. We're the only manufacturer to include other brands and that's because the calculator has been approved by DEKRA [Germany's independent test and inspection organisation]."

However, if you're still bewildered, Conti will undertake a fleet audit, through an independent business called Entirety. That costs around £300 for a Saturday (or whenever most vehicles are back at base) inspection covering up to 20 vehicles. "The tyres tell [the auditors] whether there is over-inflation, under-inflation, damage, misalignment or whatever," explains Gregg. "And from that we can work with the fleet manager and service provider to improve tyre husbandry."

Meanwhile, at the most basic level, tyre codes help. The first letter is H or L for heavy or light; the second is either S, D or T for steer, drive or trailer; and the last is R for regional, L for long-distance, W for winter, or U for urban.

**Life after death?**

In the UK alone, nearly 1 million new tyres are bought every year, but there are also around 900,000 retreads. So what about second-life tyres?

Gregg explains that it's all about the operation. "Someone doing long-distance work should re-groove, but someone on site work might not want to, because it might end up chunking the casing," he says.

However, here's a key point. "New premium tyres have a layer of rubber under the tread that can be re-grooved. If the tyre has worn down to 4–5mm and you re-groove another 3mm, you are at the point where tyre wear is at its least, so the tyre will last longer than the 3mm suggests." And he adds: "You're maximising tyre life where you're getting best fuel consumption. So we tell most



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## Under pressure

Running under-inflated tyres can cost up to 25% of a tyre's life. It also impacts on fuel economy. That's why tyre pressure monitoring (TPM) equipment is being looked at by most major manufacturers.

One system favoured by the plant maintenance boss at the Barrick Osborne gold-copper mine in Australia has now been launched in the UK by Nottingham-based Aide Automotive.

"We've been using the PressurePro wireless TPM system at our mine in Queensland and one of our mines in Western Australia," explains mobile plant maintenance superintendent Dave Pafflin. "It's accurate, tough and easy to install. Unlike manual systems, it also operates 24/7, with the vehicle stationary or moving. Drivers have been alerted to under-inflated tyres several times, saving both tyres and downtime."

Prices start from £300, depending on the vehicle and number of wheels, but there is a simpler system called Air Alert, also from Aide Automotive. Costing an average of £7 per wheel, this device is installed directly onto tyres. A blinking light warns of pressure loss (down 4psi for light vans or 8psi for larger commercial vehicles).

## Vacu-Lug's guide to tyre retreading

Retreading involves taking a worn casing of good structural quality and completely renewing the tread, and normally also the sidewall rubber. The rebuilt tyre then undergoes a curing process, during which the new rubber is vulcanised and the tread pattern formed.

Following a visual and tactile inspection, the casing is subjected to a shearography test, which detects minor separations or porosity invisible to the naked eye. Computer-controlled buffing then removes the remaining tread and sidewall rubber to precise dimensions, using high speed rasps and brushes.

The buffed carcass is subjected to a penetration check to detect minute holes in the inner walls. Then, after filling, the casing is sprayed with a water-based adhesive, in readiness for the build process.

A new tread is then applied to the carcass, with, typically, a continuous strip of premium rubber compound being wrapped around the carcass while it revolves on an inflatable chuck.

During curing, the tyre is placed in a hot, segmented radial matrix or mould within a press. Curing takes up to 95 minutes at 150°C, during which time an internal bladder is inflated to 200psi to maintain the tyre's shape. Curing ensures that the new rubber is correctly vulcanised and produces the exact tread pattern and depth.

Finally, once cured, cooled and trimmed, there are three further inspection processes. First, a visual and tactile test uses trained eyes

to spot if there are any flaws in the tread pattern or sidewall. Secondly, tyres are rapidly inflated to 110psi over a three second period. Finally, a second shearography test assures the integrity of the end product.



people to consider re-grooving, if the vehicle is not operating under arduous conditions."

Re-treading is also worth considering, because casings that pass inspection are rebuilt into what amount to new tyres. "There's a hot process, which makes the tyre as good as new, or there is a cold process, where tread is buffed off and a new tread stuck on and 'cooked' at low temperature," explains Gregg. "More than 60% of UK retreads are from the hot process."

According to Gregg, the best way to benefit from a retread is, again, by starting with premium brands. "The casing will be the latest technology, with all the protection built in. Once you've decided to retread, you can go for the hot process, which makes the tyres look like new, or the lower-cost 'top cap', which won't look so good, because the sidewalls might be scuffed."

Which way should you go? "With re-grooving, fleets can get up to 20% additional mileage for a cost of, typically, £20," explains Gregg. "However, the advantage of a retread is that fleets can get about 95% of the original mileage for about 70% of the price. So it makes good economic sense."

### Technology transfer

New technology is adding to the advantages afforded by premium tyres and, although reliability is already very high, considerable R&D is going into better compounds, casings etc. According to Sharratt, much of the current focus is on reducing rolling resistance and tyre-to-road noise, without compromising wet grip. "One way to achieve some of these is by reducing weight, without reducing strength, he explains. "This is where we bring in our high-tensile materials, such as lightweight high-tensile steel."

However, while signalling that Goodyear Dunlop invests heavily in R&D, Sowerby says it's not the be-all and end-all: "When it comes to tyres, technology is only part of the answer. We are investing an awful lot in Fuel Max, which is a tyre designed to maximise fuel efficiency, and KMax, which is our high-mileage technology. But, if the fleet's not looked after properly, then you lose tyres and your bill goes up. So a key part of our offering is the service network, Truck Force."

As for retreads, Goodyear Dunlop builds its Tread Max tyre on the Fuel Max carcass, as well as producing its Next Tread range. Sowerby says both are designed to help operators cut costs and get a second or third life from their tyres. And he adds that the company will continue to seek out ways to improve rolling resistance further, while also reducing weight, possibly with carbon fibre. "The latest tyres we've produced are lighter than their predecessors and we intend to keep that going. The shape of what we're trying to do won't change, but we'll strive to do it better." 