GENERAL CONSIDERATIONS

In addition to the recommended use of specific "fuel efficient" tyres, here are a few general comments concerning factors affecting tyre rolling resistance:

- Rib type tyres are better on rolling resistance than block type, this is mainly due to less inversion of the tread at the contact patch area.
- Low aspect ratio tyres are stiffer, allowing for less flexing under load, thus they typically have lower rolling resistance compared to high aspect ratio tyres.
- Worn tyres have less rolling resistance than new tyres - as a truck tyre wears down, the thread pattern stiffens, which leads to less flexing-deformation in the tread area. The use of fuel efficient tyres at all axle positions can make a significant difference in fuel consumption; a reduction of 10% of rolling resistance on a complete vehicle results in approximately 3% reduced fuel consumption (approx 0.9 litres/100 km on a vehicle which consumes 30 litres/100 km).

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Example:

A standard 40 ton truck, average fuel consumption 30 litres/100 km, yearly mileage 150,000 km, fuel price 1.00 €/litre, equipped with "standard" type tyres:

- Yearly fuel cost: 1,500 (100 km) x 30 litre/100 km x 1.00 € = 45,000 €

The same truck equipped with "fuel efficient" tyres (10% reduced rolling resistance):

- Yearly fuel cost: 1,500 (100 km) x 29.1 litre/100 km x 1.00 € = 43,650 €
- Potential saving: 1,350 € per year/truck

SUMMARY

We cannot influence the road conditions, but the use of low rolling resistance, fuel efficient tyres, in combination with good vehicle and tyre maintenance, as well as adequate driving styles, allows fleets to minimise truck fuel consumption compared to the use of "standard type" on same vehiclename operations.

Today's fluctuating fuel prices, as well as more and more restrictive emission legislations, fuel consumption is in a major economical and ecological factor in transport operations.

Goodyear's modern, fuel efficient truck and bus tyres provide an ideal option to:

- maximise fleet efficiency
- minimise emissions
- reduce CO₂ emissions

10% tyre rolling resistance decrease bet added = 3% fuel economy

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TYRE ROLLING RESISTANCE

As a vehicle travels down a road, there are a number of factors that contribute to the amount of fuel a fuel tank contains after the trip has ended. The main parameters are vehicle weight, aerodynamic drag, mechanical losses and tyre rolling resistance. Although tyres are just one of these factors, they can contribute up to 50% of the vehicle's total fuel consumption.

As each tyre on a vehicle rolls down the road, it creates a drag force. This is composed of the energy lost irreversibly by the deflections of the tyre sidewall and the movements, compression and deformation of the tyre tread at the road's surface. The drag force is called rolling resistance and can be measured very accurately in a laboratory. The contribution of tyres to the total energy required to move a vehicle down the road is dependent upon the effects of many outside factors, which include:

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