



Tyre Selection

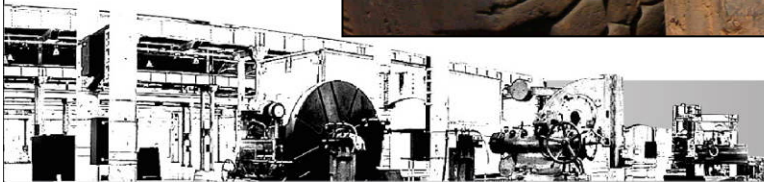
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Organisation - Goodyear Dunlop Tyres



Application

Correct selection of pattern and tread compound are important...if your running the incorrect tyre this is what can happen.



Application..Effect

295/80R 22.5 Highway Steer Tyre



25,000kms Severe Gravel Rd



118,000kms Highway



Polymer Properties

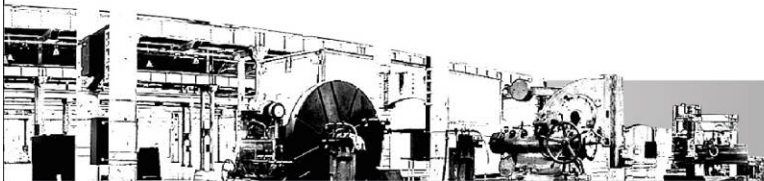
(SYNTHETIC)

- Most polymers have unfortunately conflicting performance properties like high abrasion resistance and high temperature generation.
- A blend of different polymers is therefore frequently necessary to obtain specific compound properties for either specific components or tyre applications.

POLYMER TYPE	NATURAL RUBBER	STYRENE BUTADIENE
Heat Generation	+ +	
Tear Resistance	+ +	
Skid/Traction	+	+ +
Treadwear		+
Heat & Ozone Resistance		+

Good +

Poor



Tyre Choice

What parameters do you need to consider when choosing a tyre?

Route: Urban, Regional Haul, Line Haul or a haul road in a mine site.

Terrain: Hilly Area, Winding Roads, Hills & Curves

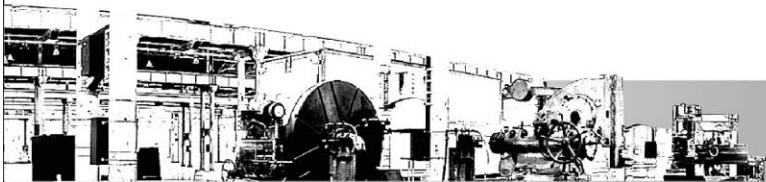
Road Surface: Asphalt, Concrete, Course Chip, Gravel, etc

Climate: North Queensland in mid summer or Snowy Mountains in mid winter

Position: Steer, Drive, Trailer, etc

Pattern: Rib type, Block type or a Rib & Block combination

All these things need to be considered to achieve the best CPK



Optimizing Tyre Performance

How can we optimise tyre performance?

Modern Instrumentation

With the use of telemetry systems we can measure vehicle parameters in service

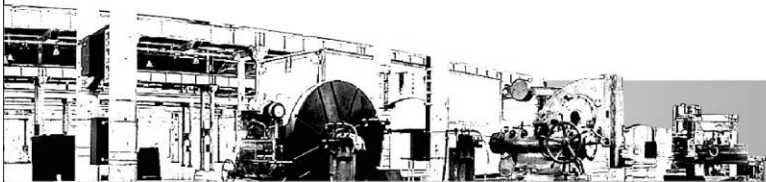
Longitudinal forces

Lateral forces

Altitude

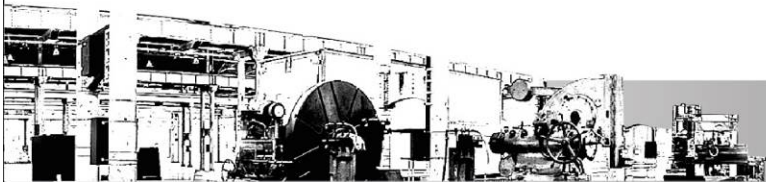
Road Surface – rough roads & smooth roads

Wear rates / evenness



Retreading

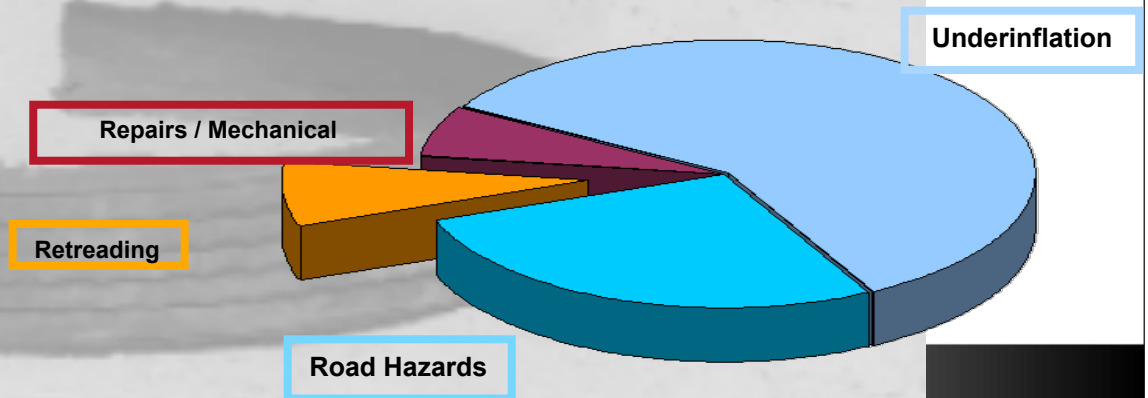
*Myths
&
Benefits*



Retreading

Roadside tyre pieces

- Are roadside tyre pieces retreading failures?
 - **Not usually**
- The ATA (USA) investigated failed roadside tyres
 - Nearly 4,000 tyres were inspected
 - Over $\frac{3}{4}$ of truck tyre fragments were a result of either:
 - Under-inflation or
 - Road hazards
 - **Less than 10% were retread failures**



Retreading

Tyre Construction

A truck tyre weighs ~ 55kgs, 8kg of which is steel

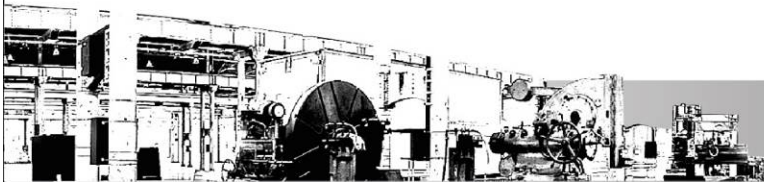
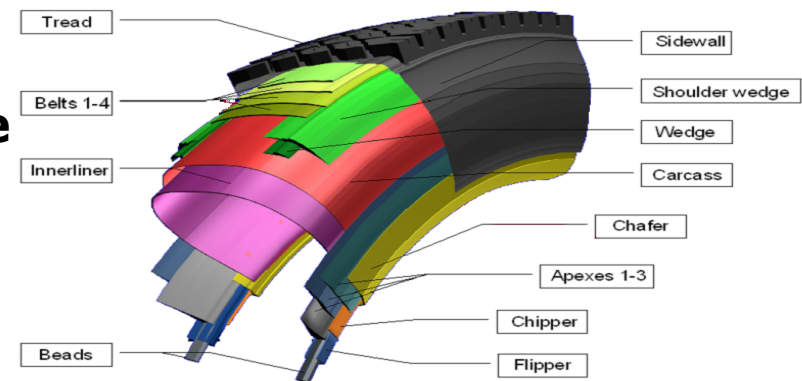
- New tyre raw materials consume 85 litres of oil
- A retread consumes only 23 litres

After the tread is worn out

- the tyre casing is **usually still serviceable**
- *and* has been designed to be retreaded

Retreading is very efficient recycling

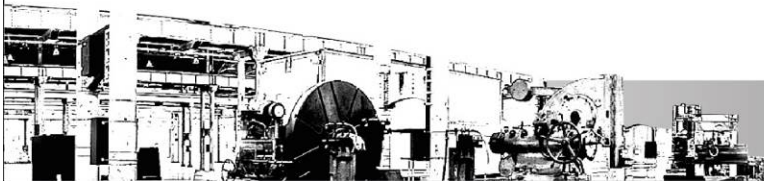
- **Maximises use of these resources**



Retreading

New Tyre Technology

- **New tyre technology complements retreading**
 - Many new tyre technologies carry over to the retread
- **Low rolling resistance (RR)**
 - Casing design significantly affects RR
 - Tread pattern / compound = over 50%
 - **Remainder is tyre casing design**
 - Optimising a tyre casing to improve RR
 - Often improves casing life and retread ability
 - RR improvements continue to provide gains when retreaded



Retreading

Fleet Considerations

A few points to consider

- What tyres are you using now?
- Can you improve your cpk?
- Where can retreads be put to best use in your fleet?
- Do you track casings from cradle – grave?
- Do your casings receive necessary maintenance?
 - Regular pressure and tread depth checks
 - Driver care

THANK YOU

