

# THINGS TO KNOW

**Things to know to get more from tyres** - Taking proper care of apparatus tyres will have a major impact on the department's operating budget.

A fire truck's tyres are both a major safety and financial concern for every fire department. Properly maintained, they will reduce waste and the risk of injury. This is where the rubber meets the road.

The manufacturers of commercial-grade truck tyres, the ones we run on our fire apparatus, agree that the single greatest factor in poor tyre performance is under-inflation. Paying close attention to inflation pressures and to tyres that have run underinflated has never been more important, considering the potential for sidewall ruptures and the cost of tyre related downtime.

In addition, under-inflation can lead to separation of the tyre's tread from its casing; higher risk of road hazard to other vehicles when a tyre fails; loss of fuel economy; uneven and irregular tread wear; higher downtime expense; and loss of casing durability.

**Weigh in** - The steer axle and drive-trailer axles carry very different weight loads. So the optimum air pressure could be different for the tyres on each. You have to know how much weight a truck is carrying on each axle and tyre.

The majority of tyre manufacturers have load and inflation tables on their websites where you can find the optimal air pressure for your vehicle's weight load. The URLs for all the websites, or hard copies of the tables, for each of the tyre manufacturers represented within your apparatus fleet should be readily available to the personnel in the maintenance facility and fire stations.

**Under pressure** - The tyre industry recommends checking inflation pressures once each week on all tires. This check should be made with a calibrated tyre gauge or a gauge that is checked periodically with a gauge known to be accurate.

Always check inflation pressures when tyres are cold. Never bleed air from hot tyres to relieve normal pressure build-up. The normal increase in pressure due to service conditions will be 69 kPa to 103 kPa, and this is allowable in a radial truck tyre.

Another valuable tip is to use a sealing metal or nylon valve cap or a quality air-through type cap. Plastic caps do not provide a secondary seal to the outdoor environment. And no cap at all allows dirt, water and other foreign materials into the valve. Their presence invites air leakage.

**Tyre inspection** - Carefully inspect any tyres that have been repaired or have cuts, snags or other penetrations. To find out, rub your open hand over the tread in several directions. Do you feel any edges? Does it feel smooth? If not, there are forces acting on your tyres that are causing it to wear incorrectly. These forces can include alignment issues, incorrect air pressure or mechanical problems.

If it doesn't look or feel right, more than likely something is wrong with the tyre. Follow your department's procedure for placing the apparatus out-of-service until the tyre can be thoroughly inspected by a trained technician.

NFPA 1901: Standard for Motorized Fire Apparatus has included several tyre-specific recommendations during recent updates to the standard. Those additions include:

- Rubber compounds improved for greater tread wear, casing life improved, and load capacities increased (1991 edition).
- Run-flat device that allows safe steering control during tire blow-out (2005 edition).
- Methods of tyre pressure monitoring required (2009 edition).

**Economic factors** - Improper tyre maintenance will not only rob you of expensive rubber in the wear of the tyre, it also costs you fuel. And isn't your budget for fuel being stretched enough already?

Fuel-efficient tyres will save your operation much more than using non-fuel efficient tyres that might get a few more miles before wear out. Several of the major truck tyre manufacturers have developed on-line cost calculators to assist departments in assessing the fuel efficiency of their current tyres against available fuel-efficient products.

**Tyre care do's**

- Maintain proper minimum inflation for the load carried per the manufacturer's recommendations.
- Maintain mated dual tyres at equal inflation.
- Use sealing-type valve caps.
- Check inflation at weekly intervals.
- Keep inflation air dry.

**Tyre care don'ts**

- Don't permit tires to operate underinflated.
- Don't bleed air from warm tyres to relieve pressure build-up.
- Don't reduce tyre pressure to obtain a softer ride.
- Don't run with one tyre of a dual assembly at low pressure or flat.
- Don't inflate to cold pressures beyond rated rim capacity.