Story Archives

Why not try nitrogen?

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I am a subscriber to Tire Business living in South Africa and after reading the ``Don't be fuelish'' item in your Marketplace column (March 31, 2003), I felt I had to comment on the subject you raised-tire inflation.

You quote John Peer of Goodyear reminding us all about what happens to tires that are run underinflated, and you and I both know he is absolutely correct.

However, for over six years now I have been inflating my car tires with nitrogen and to my amazement I realized after a while that I was not losing pressure in them. I also found that my ``nitrogen'' tires were performing better than the same brand (Michelins) using air on the same vehicle (Land Rover) by some 20 percent to 30 percent. This could mainly be due to the constantly correct pressure, but I also know now that my tires run cooler on nitrogen.

There is some discussion on this ``cooler running,'' but a number of academic sources, including a professor at the University of North Dakota, explain that while nitrogen is a pure, clean gas, air is not. Air contains water vapor and particles of contaminants such as oil and dust, which retain and accumulate heat; hence, heat build-up is less with nitrogen.

I understand that the reason air-inflated tires constantly lose pressure is that water vapor/condensate is formed when air in a hot tire cools-much as a condensate ring forms under a hot cup of coffee on a cold table. And condensate permeates or migrates through a tire some 200 times faster than nitrogen does, thus causing the pressure loss. As nitrogen is a completely dry gas and also is inert and therefore non-combustible, and is freely available in the air (78 percent), it seems a bit obvious that we should be inflating our tires with nitrogen.

It is a common experience of motorists in South Africa that once you have filled newly fitted tires with nitrogen, you will never need to top them up for the life of the tires. One company here, Tiger Wheel & Tyre, is pumping up more than 21,000 car tires per month with nitrogen at 34 of its retail outlets. It recommends to clients that they should come in every six months for a pressure check and if a top-up is necessary, it will be done free of charge.

Locally, Michelin has been running an ad on our national TV saying ``...buy two Michelin tires from Tiger Wheel & Tyre and get free nitrogen, which will extend the life of the tires by up to 20 percent.''

Michelin then pays Tiger $1.50 per Michelin tire filled with nitrogen.

The nitrogen is made very simply on site by a ``converter'' unit that removes the volatile gases, such as oxygen, hydrogen, etc., from the shops' own in-house compressed air supply. Nitrogen is in this way extracted from the air by a polymer membrane filter, and in the U.S. this equipment is now being produced by Branick Industries of Fargo, N.D.

So it seems the long lines at gas stations would not happen if tires were inflated with nitrogen-and fuel consumption would also be reduced!

I would like to see some serious discussion on the subject, particularly from the ``almighty'' tire companies whose word seems to hold so much weight in the U.S. They all know full well about nitrogen, but I think they see it as a threat to their production volumes in the future because it will definitely extend tire lives.

They all have publications out on its benefits, particularly in the OTR area. But the benefits apply to all sizes of tires, which they seem unwilling to admit because they see it as a threat.

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