

# *A brief history of rush hour*

Two weeks ago, this column reported on the supposed announcement, on April 1st, of new automotive technology. The story was meant as an April Fools joke, but I erred in not making that clear, and I must apologize. I had thought that only in a fantasy could politicians, auto companies, police forces, and motorist associations agree on a plan to eliminate speeding. But apparently the project sounded quite plausible to some readers, even though it was entirely fictitious.

In an effort to balance the scales, I thought I might tell another technological tall tale, which is wholly implausible, but factual.

Visualize a tribe called the North Americans. Although there were minor jurisdictional differences, the North Americans shared one economy and one lifestyle – a way of life based on a marvellous invention called the car.

Barely a hundred years after the invention of cars, the North Americans drove them by the tens of millions. The cars were powered by tiny explosions of gasoline. Unfortunately, basic physics decreed that internal combustion engines weren't very efficient. A good gasoline engine managed to convert only about 20% of the thermal energy in the gasoline to mechanical energy powering the wheels.

So cars wasted a lot of energy – but the North Americans went much further. The North American car averaged about 20 times the weight of a passenger, and the North Americans used their cars, more often than not, to move one person at a time. Therefore nineteen-twentieths, or 95%, of the energy powering the car's wheels went to moving the weight of the car itself, while only 5% moved the person. Basic math: 20% conversion efficiency times 5% utilization = 1% energy efficiency for transporting people.

As you might imagine, since the North Americans wasted 99% of gasoline's energy, they needed a lot of the stuff. Their homeland was rich with petroleum resources, deposits which had formed in the earth over millions of years. But in less than 100 years, the North

Americans burned up most of their easily accessible oil. They met the challenge in ingenious ways. They explored to the ends of the earth and beyond, and devised ways to extract oil from deep beneath permafrost. They built fabulous drilling platforms which towered above the ocean waves, weathering tides and typhoons. They paid for fearsome jet bombers and guided missiles, which gave them dominion over peoples whose far-away lands had far more oil than their own lands.

But traffic jams stumped them.

Since the cars were 20 times bigger than the North Americans, they not only burned a lot of gas, but they also took up a lot of room. When the people went to work, the roads were so full of cars that the people hardly moved.

Only a few decades into the motor age, all the North Americans' cars could easily surpass the speed limits of 100 kilometers per hour. But it got harder to find the space to do so. For several hours every day, when the people made most of their trips, the roads were stuffed with cars, creeping along at 10, 20, 30 kilometres per hour, per hour, per hour after hour.

What did the people do next? They demanded bigger, heavier, more powerful cars. During the years 1981 to 2003, in fact, the Environmental Protection Agency calculated that the average passenger vehicle grew in weight by 24%, and the average engine grew in power output by 93%.

Did these bigger, more powerful cars unclog the roads, shorten the commutes? Alas, their drivers were unable to jump over tie-ups. They could zip from 0 to 60 in no time flat, but each one merely reached the slowdowns a little bit quicker than all the others. With their powerful engines throbbing, the North Americans fumed through rush hours that grew from 60 minutes, to 80, 90, 120 minutes.

It's a bizarre, absurd, wildly implausible tale. But, honestly, it's not a joke.

