



The slot machine

By STEPHANE GAGNÉ

For most of us, driving to work every morning is something we do without thinking. And a daily flow of 14,000 cars on Jeanne-Mance St. doesn't trouble us either. But these things we do every day have many serious social, economic and environmental consequences.

Did you know, for example, that an average motorist who drives 16,000 km per year causes the emission of 35 kg of hydrocarbons (HC), a kg of benzene, 250 kg of carbon monoxide (CO), 15 kg of nitrogen oxides (NOx), 4495 kg of carbon dioxide (CO₂), and 1890 litres of gasoline? Imagine all these pollutants, multiplied by 600,000 - the number of car owners in the Montreal Urban Community (CUM), or by 518,000 - the number of cars that drive to and from the island every day (1991).

All these pollutants have effects on human health and the environment. For example, simply filling up at the gas station can be a health risk. While filling up, one breathes gasoline vapours containing benzene - a volatile organic compound (VOC) and known carcinogen. Like benzene, ten other compounds from the VOC family are carcinogenic.

In addition, VOC's react with nitrogen oxides in the presence of

sunlight to form ground-level ozone. This secondary pollutant affects the growth of crops and forests. It also affects the human respiratory system.

Other pollutants caused by cars include carbon monoxide (CO) - a poison if inhaled in large quantities, and carbon dioxide (CO₂) - the major cause of the greenhouse effect. Finally, the NOx are also responsible in part for acid rain.

Since 1975, the development of pollution control systems (catalytic converters, oxygen monitoring, gasoline vapour containment, etc) has had tangible results. Gasoline consumption per car has also been greatly reduced.

This reduction has certainly led to an improvement in air quality. In the territory of the CUM, every pollutant measured, except ozone, has a lower concentration now than it did at the beginning of the '80s.

Nonetheless, cars remains a major cause of urban pollution. They are responsible for a fifth of the VOC emissions, and a quarter of the NOx emissions in Quebec (1990). Ground-level ozone formation is also largely due to auto exhaust.

While each vehicle pollutes less, there are more vehicles on the road. As a result, some pollutants, such as ground-level ozone, have not decreased in the last ten years,

and traffic congestion has actually increased.

Traffic congestion, one of the scourges of the 20th century, has many significant effects: lost time and money; stress; increased risk of accidents; and more pollution. During a traffic jam, when a car's engine idles without reaching its maximum efficiency, it uses more gas. All these slowdowns have real costs: a partial analysis by Transport Quebec has already put the cost at close to a billion dollars a year for the region of Montreal. The real cost of traffic congestion is probably much higher, since some costs, such as the environmental cost of CO₂ emissions and noise, were not included in the analysis.

The improper use of pollution control systems is also a major factor in air pollution. A vehicle with an ineffective or disconnected pollution control system spews out 6.5 times more VOC's, CO and NOx than one whose system is intact.

The solution: Adoption of a program of inspection and compulsory maintenance. André Montpetit, supervisor of inspection for the Environment Service of the CUM. M. Montpetit has recommended to the government of Quebec that the region of Montreal adopt such a program. The problem is serious: 22% of the 2884 vehicles inspected during federal-provincial inspec-

tions between 1986 and 1990 had damaged or missing pollution control systems. M. Montpetit suggested that the real percentage of poorly-maintained vehicles was probably higher.

Finally, the choice of gasoline can also increase pollution. According to the Association de protection des automobilistes (APA), high octane fuel (super) pollutes more than regular gas; is more expensive; and is often unnecessary. This type of gasoline contains more MMT (a magnesium derivative which replaces lead in unleaded gas, and causes damage to pollution control systems), and has 60% more benzene and 64% more aromatic hydrocarbons. "Contrary to popular belief, using premium grade gasoline does not improve engine performance", said Alain Gosselin, air quality specialist at Environment Canada. Most engines are designed for use with regular gas. Using premium grade gasoline doesn't help, except in rare cases, such as that of a car towing a trailer.

Beyond its polluting effects, the automobile also has other social, economic and environmental costs. Take for example road accidents. In 1992, cars were involved in 87.5% of all accidents, including fatal, serious, and minor injuries, as well as property damage. Even though the number of road deaths fell by a third (from 1464 in 1981 to 966 in 1992), the issue remains a serious, and costly one for society.

Cars also take up lots of space in our cities.... and in our lives. Up to 42% of the downtown area,

and 18% of the total metropolitan area is dedicated to auto use (roads, parking lots, garages, etc). The existence of the automobile has also led to the development of living arrangements that devour money, space and energy, but are well adapted to the car: namely, the bungalow and the suburb. As the ecologist Luc Gagnon has shown, the bungalow option takes four times as many roads, sidewalks, sewers, and waterworks as duplexes or townhouses do. It also takes four times as much energy to clear roads, as well as a panopoly of other costs. In comparison, a densely-populated city uses 40 times less ground, 15 times fewer roads, and 5 times less waterworks.

Finally, enormous financial resources are dedicated to auto use. The State subsidizes the car, to the tune of \$4000 per person, per year, for such things as the construction and maintenance of the highway infrastructure, health costs, etc. Add to that \$4000 per year minimum, per driver, to pay insurance costs, gas and maintenance, etc.

Is it worth it? How many people go into debt so they can buy a steel cage that's parked three quarters of the time, and used mainly for short trips that could equally be made using public transit, by walking, or by cycling? Must we allow our lives to be ruled by the automobile, when we have other choices?

We'd like to thank Environment Canada for their collaboration via the Saint-Laurent Centre.



La voiture est une cause importante de l'endettement personnel. Owning a car causes many people to go into dept.

Opter pour l'autobus est la meilleure des astuces.

