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The veggie Benz

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Daily Messenger

Posted Apr 09, 2009 @ 12:05 PM

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Bloomfield, N.Y. — Philosophers strive to know and understand the human condition and act accordingly. So it is with Tim Engstrom, chairman of the philosophy department at the Rochester Institute of Technology.

When Engstrom needs to fill up his car, "I walk across the street and get a slice of pizza instead of waiting for a tanker from Saudi Arabia," he says, referring to Hometown Pizza and Video across from his home on Main Street in Bloomfield.

He pops the trunk on his 1960 Mercedes Benz 190D, opens a fuel tank inside and pours in golden liquid — recycled vegetable oil — from a 5-gallon jug.

This neighborhood restaurant gives him all the old cooking oil he needs. It saves on disposal costs for Hometown Pizza and lets Engstrom use something once thrown away.

The old gray Mercedes he bought in 2005 has 197,877 miles on it and averages 37 to 40 miles per gallon on filtered cooking oil. The nearly 50-year-old car was a rare find at \$5,000.

Engstrom added carpet, the vegetable oil conversion kit from Greenwrench Energy (greenwrench.com) and had some work done at the CDI car dealership in Victor, including a new alternator and seat belts (a 1960 190D did not come from Mercedes with belts).

The modifications came to \$2,800; that includes \$800 for the tank, lines and filters that come from Greenwrench for the conversion kit.

The switch to vegetable oil is in keeping with Engstrom's automotive lifestyle. He keeps each vehicle to use, not to impress.

On clear, warm days, he rides his rebuilt 1939 Indian Chief motorcycle to RIT. On crisp, cool days (English cars hate heat), he drives his 1962 Triumph TR3.

Other days are for the Benz, which he calls his "elegant economy car." Horrible upstate days are a job for his compact pickup. If one vehicle breaks, the others are ready.

The main drawback with free vegetable oil as a fuel, Engstrom said, is the darn paperwork. New York generally encourages recycling, but when burning recycled vegetable oil, motorists must file papers 16 times a year.

Engstrom recently wrote to his congressman, Eric Massa, D-Corning, to ask for help: "Please try (again) to get New York state and/or the federal government to set these (requirements) aside.

They add a level of complexity and bureaucracy that are counter-productive," he wrote.

The old Benz is not clean-burning, however. It produces greenhouse gases and particulates, though less than some other older cars and trucks, thanks to its modest 55-horsepower four-cylinder engine first.

Across RIT's campus from where Engstrom parks the veggie Benz sits the Golisano Institute For Sustainability. Here another RIT faculty member, associate professor Mike Haselkorn, tests biodiesel, ethanol and other alternative fuels.

While Engstrom fights waste and bureaucratic silliness, Haselkorn seeks engineering perfection and thermodynamic correctness.

"Be aware of the pitfalls," Haselkorn said of burning recycled vegetable oil. It seems that something happens to this stuff churning out french fries.

"They do run. The first diesel ran on peanut oil. But number one, we've seen that waste grease (cooking oil) is a little acidic. It also picks up more water," said Haselkorn. "He might get into trouble with his fuel pump."

Of course, by then Engstrom will have saved enough on gas to buy a new pump.

Haselkorn prefers the refinery produced biodiesel his group tests at RIT. A fleet of campus vehicles currently run 20 percent biodiesel year-round and will convert to 90 percent refined vegetable-based biodiesel this summer. These are still fuels you have to buy, though, as opposed to picking up free from diners.

Engstrom recycles in other ways. He lives in a restored historic home with his partner, Lara Kuhn.

She won't drive the veggie Benz, but she understands why he does.

"It's the simplicity of these. If something happens to them he can often fix it himself," says Kuhn.

And besides, she adds, "They're cheap!" Engstrom says his three classics, including the Benz, "together cost less than the price of a new car."

The 190D was once Europe's taxi cab of choice in the Cold War era and has a loud diesel roar on startup. It smooths as it warms and soon is humming along like a miniature delivery truck. Exiting his Main Street driveway, Engstrom runs the four-speed, column-mounted shifter through the gears. "It's so seamless!" he declares as he flips a switch.

A green light signals as the Benz rolls past the Bloomfield Academy building — and voila! — the car is burning cooking oil and emitting a delicious odor.

The Benz warms up on diesel, then is switched to cooking oil. Before shutdown, he switches back to diesel to purge the vegetable oil. Left to congeal at low temperatures, straight vegetable oil without diesel fuel mixed in (biodiesel) or additives may turn to gook, a semi-solid which can spoil your chance to restart the engine.

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Says Engstrom, "Because what we consume has added consequences in the world we live in, this is an opportunity to do something both responsible and pleasurable at the same time."

Veggie cars start with a diesel engine

Older, used diesel light trucks and vans from Ford, Chevy and Dodge abound at the moment, thanks to high diesel prices. Older engines with fewer emissions controls can be better veggie oil conversion candidates than modern engines designed to accept the low-sulfur diesel fuel now required by law.

New diesel cars such as those available from VW, Audi and Mercedes have emission systems that may not handle vegetable oil, according to RIT professor Mike Haselkorn, and can cost a lot to convert.

Use of 100 percent vegetable oil in a new Volkswagen Diesel can void warranty coverage, though the company lets owners run B95 (95 percent diesel, 5 percent vegetable oil) without endangering coverage.

Conversion kits can be found in diesel buff magazines and online from makers like Greenwrench, Frybrid and Greasecar.com. Kits and advice on converting farm equipment, buses and other diesel equipped machines is also available.

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