

September 2003

OVERDIFEATURE

Better Burns

By John Baxter

PUTTING THEM TO THE TEST

When it comes to fuel-saving devices, many owner-operators give more credence to first-hand testimonials than to second-hand claims from a lab test. However, from the point of view of an engineer, the experience of any given user has limited usefulness because it does not account for many variables.

"There are many ways to calculate mpg and even the smallest oversight can result in large errors," says The Fleet Managers' Guide to Fuel Economy, published by The Technology and Maintenance Council of the American Trucking Associations. Possible errors in miles per gallon include speedometer calibration inaccuracy, use of map miles instead of odometer miles, failure to record all trips and missing records. And that's just for starters. "It takes a lot of miles and a lot of trucks to flatten the effect of variables like variations in tread depth, inflation pressure, weather, seasonal changes and driver behaviour," says Victor Suski, project manager for the ATA's Technology Demonstrator Project.

The driver is arguably the principal variable in fuel mileage. "There is as much as a 35 percent difference between the most proficient and the least capable drivers," says The Fleet Manager's Guide. Furthermore, Suski cautions, "Drivers who know they are testing fuel savers often drive more carefully, making it appear the devices are working when in fact it was driver behaviour that caused the increase in fuel economy."

The answer to these problems is to control testing as much as possible. Technologies tested at university engineering labs, with the military, or with independent labs or consultants can be done with widely varying degrees of control. [The most carefully controlled program is the Technology and Maintenance Council's Type IV, which discounts as many variables as possible. For example, one day is spent preparing two trucks — one with the device to be tested, one without. Weights, tire pressure and other factors are equalized. Precise measuring techniques are used. Drivers switch trucks at predetermined locations to rule out differences in driving style. \(None of the devices mentioned in the accompanying story have gone through expensive Type IV testing.\)](#)

Cummins "neither approves nor disapproves" of aftermarket fuel savers, says Mark Conover, marketing strategist. He adds that engine makers have "an awful lot of smart people doing research on diesel technology. They tend to discount the claims made for add-on devices."

[Chuck Blake, a Detroit Diesel engineer with many years of road-testing experience, says he tends to downplay claims of fuel savings and power increase unless at least six trucks \(three with the device, three without\) are tested. "You need at least two months of fuel and performance data just prior to testing and two months of testing in order to get an accurate idea if the device works," he says.](#)

Government agencies offer limited insight into product worthiness. The Environmental Protection Agency "has a voluntary testing program but there is no law saying any device must be tested," says Don Zinger, an EPA assistant director. "We publish results of testing in the Federal Register, but devices can be sold no matter what is published there."

The Federal Trade Commission, which investigates claims of false advertising, "has not had any reports of false advertising involving such devices from the Class 8 industry," says spokeswoman Claudia Farrell.