



Passenger and Commercial Transport Vehicles

During development, OptiFuel™ was tested by a Canadian retail company that runs their own truck line. The company conducted its own tests using two separate commercial vehicles, each running the same daily route with the same daily load. The first vehicle recorded an improvement in fuel consumption of 11.9% and the second vehicle 13.9%. Concomitant to improved fuel economy, there was an average improvement in smoke/opacity of 64.8%.

Also during development, a second company in Canada tested two 18-wheelers running the same daily routes with the same loads, using winter fuel formulation. Overall fuel mileage improved by 12.2% over the 5-week period of the trial compared to baseline winter fuel formulation fuel economy.

A UK retailer tested OptiFuel™ at one of its delivery depots, running the trial on pairs of trucks that had similar routes and loads. Fuel consumption for each truck was already being monitored, so at the onset of the test, half of each pair was switched to OptiFuel™-dosed fuel and the other half of the pair run on regular fuel. There was a fleet improvement in fuel consumption of almost 5% in the OptiFuel™ trucks as compared to the trucks run on regular fuel.

In a similarly designed paired trial, 10 school buses operated in a large US school district were paired based on normal load and distance parameters.

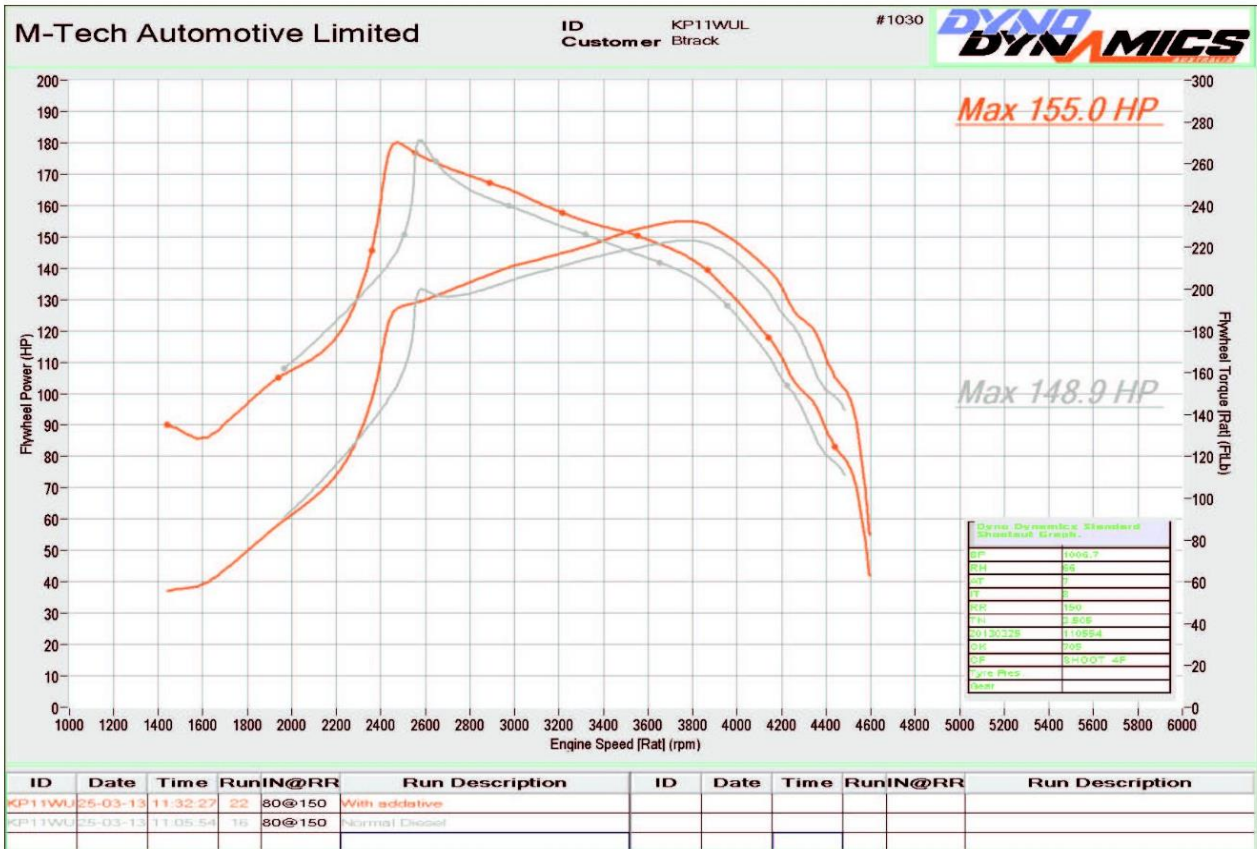
A paired trial run on a pair of commercial school buses operated on a US military base fitted with electronically controlled Cummins 5.9 liter diesel engines powered by commercially available biodiesel was undertaken to determine the effect of OptiFuel™ on biodiesel. 14 months of baseline data was reviewed as a comparison to determine the fuel economy of the buses. As in other trials, one bus kept operating on biodiesel, the other was switched to biodiesel dosed with OptiFuel™. Over the 9-month period of the trial, the OptiFuel™ bus showed a 13.7% improvement in fuel economy compared to the regular biodiesel fueled bus. Engine oil testing during the trial indicated no increased wear metals in the oil resulting from using OptiFuel™.

OptiFuel™ has been tested in a variety of diesel, biodiesel, and gasoline-powered privately owned passenger vehicles. In many cases, the vehicles were only tested for changes in fuel economy, but a number of vehicles were also tested for effects on emissions.

Two vehicles were dyno-tested for the effect of OptiFuel™ on torque/horsepower as well. Below is a tabular compendium of the test result for fuel economy and emissions, as well as dynamometer results for regular fuel versus fuel dosed with OptiFuel™.

| Fuel Economy and Emission Test Results for Passenger Vehicles | | |
|---|----------------|----------------|
| Parameter | Minimum Change | Maximum Change |
| Fuel Consumption Improvement | 3.5% | 15.53% |
| Carbon Monoxide (CO) | 68.8% | 81.4% |
| Carbon Dioxide (CO ₂) | 6% | 8% |
| Nitric Oxide (NO) | 99.4% | 99.6% |
| Nitrogen Dioxide (NO ₂) | 54.5% | 58.8% |
| Nitrogen Oxides (NO _x) | 22% | 94% |
| Smoke/Opacity | 50% | 89% |
| Total Particulate Matter (PM _{tot}) | 47% | 60% |

Gasoline Ford Passenger Car Dynamometer Test



Toyota Turbodiesel Pickup Dynamometer Test

