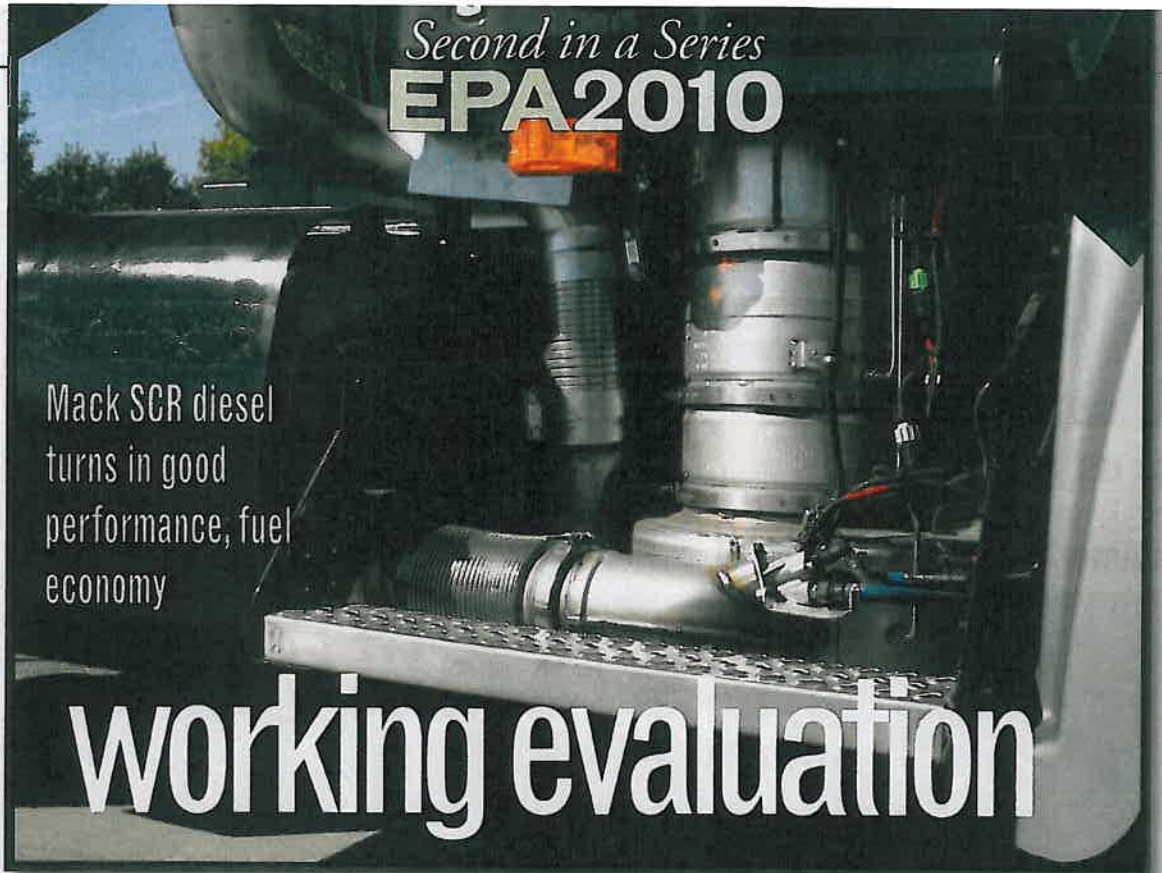


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MACK TRUCKS

It's so far, so good for a 2010-spec Mack Power engine in a Granite dump truck operated in everyday service in eastern Pennsylvania. The MP7 diesel has selective catalytic reduction equipment that has worked well and helps the engine turn in substantially better fuel economy than others in the fleet.

It drives well, too, as I learned during a visit last fall with the test fleet, Haines & Kibblehouse Inc. in Skippack, about 25 miles from Mack's Allentown home. Mack representatives introduced me to Dan Alderfer, the fleet's superintendent, and Jimmy Kissling, who had been driving the Granite with its future-tense engine since April 2008. It was one of about 255 dumpers that H&K runs out of here and elsewhere in its extensive construction operations, Alderfer said.

This truck, an '09 Granite GU813 with a setback steer axle, was the very first Mack built with an SCR engine.

It's owned by Mack but resembles others in the H&K fleet, down to its Adirondack Green paint and gold company lettering. Its wheelbase of 219 inches is about a foot longer to accommodate special apparatus, including an SCR chamber and urea tank that hang on either side of the frame beneath the cab.

The SCR difference

Alderfer and Kissling said there's very little work required to keep the 23-gallon tank filled with urea-water solution (also called diesel exhaust fluid, or DEF), which is key to the 2010 engine's exhaust aftertreatment system. DEF initiates a chemical reaction that breaks down oxides of nitrogen – the evil NOx that causes smog – into pure nitrogen and water.

"I top it off maybe once or twice a week, and it only takes one and a half to 4 gallons each time," Kissling said. He did it that often because Mack people, including Dave McKenna, powertrain sales and mar-

Blue lines and red wires lead to DEF injector and chamber below the exhaust system's pot-shaped diesel particulate filter on this Mack Granite.

keting manager, are keeping close track of DEF and fuel consumption. The amount of DEF used is expected to be about 2 to 3 percent of fuel, and of course both are directly related to miles run. In a normal truck, the DEF tank could be topped off once every two weeks or so.

Fuel economy is a strong suit of the engine. "It's 3.9 mpg low to 6.3 mpg high, with an average 5.7," Alderfer said when I checked in with him by phone this summer. Other trucks he is monitoring, including one with an automatic transmission and a newer Granite with a 2007-spec diesel, are 4.2 to 4.8 mpg. "So it's every bit of a half a gallon better" than the fleet overall, he said. "I think we're headed in the right direction." Fuel savings should offset the stiffer upfront cost of a 2010 SCR diesel, Mack and

Second in a Series

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TOM BERG

Dan Alderfer, H&K's fleet superintendent (left), and driver Jimmy Kissling say that topping off the blue-capped tank with diesel exhaust fluid is a minor task.

other manufacturers say.

2010 engines will continue to use diesel particulate filters, and this MP7 had one. It periodically "regenerates," sending unburned fuel into the exhaust, where a catalyst just ahead of the DPF turns into intense heat; this burns off motor-oil ash that accumulates in the filter's honeycomb structure. At first a yellow dash light warning that a regen was needed would come on fairly often, and Kissling would pull over and hit a switch to start the process. Mack engineers determined that fewer regens were needed and reprogrammed the electronic controls accordingly.

On the road

Kissling related this and other stories as I rode along with him on a couple of hauling runs. He's a former over-the-road trucker who's been with H&K for nearly a dozen years. With Alderfer's OK, he let me drive. This was just after we took on a load of dirt at a construction site behind the Plymouth Meeting Mall, a big shopping center north of

Philadelphia.

The engine, rated at 410 horsepower and 1,550 pounds-feet, was plenty gutsy; its Maxidyne torque curve was wide and I could lug it to 1,100 and still accelerate fine, and we could easily keep up with most traffic.

Like most dump trucks in Pennsylvania, this one had a single pusher axle ahead of the tandem, which lets the truck legally gross 73,280 pounds. Unlike most others, this pusher was self-steering, so I didn't have to remember to raise it in tight turns. The tandem rode on a 46,000-pound Mack Camelback multi-leaf suspension with an anti-sway feature that seemed to do its job, as the truck was rock steady in all situations.

We took the load of dirt about 20 miles over county roads and city streets to a quarry at Saratoga, near Pottstown, where we dumped it at the edge of the large pit. Here I used the 10-speed Maxitorque's multi-speed Reverse function, using a thumb switch to engage reverse and choosing 2nd gear to move backward at a clip

faster than most transmissions will allow. Kissling cautioned me to stop well short of the deep pit's edge – and I made sure I did, because otherwise none of what we were talking about would matter.

At the quarry we picked up a load of gravel and took it to the same construction site at the mall. As before we passed through Norristown, where traffic lights gave me some additional practice at shifting, which in High range I could do in float fashion, without the clutch. We got another load of dirt and by now it was late morning, so Kissling dropped me back at the shop where I met

my Mack hosts and we departed.

No SCR fears

When I checked with him in June, Alderfer reported that the truck is still performing well and diesel exhaust fluid remains a non-problem. "If you had a hundred trucks in a fleet then it might be, but then I suppose you'd have a dispenser right at your pump and the guys could top it off when they came in," he said.

"We haven't had it freeze up on the truck, either, and we run all year round." A cold engine makes very little NOx so the fluid isn't needed right away, and meanwhile a heater in the SCR apparatus thaws fluid in time to treat the exhaust as the engine warms up. Mack supplies the fluid so he doesn't know what it costs.

H&K isn't buying any trucks now and won't until the economy improves, but when that happens, Alderfer said he won't be afraid to buy trucks with SCR engines. ■

*Next in our
EPA 2010 series:
maintenance issues.*