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[Sean Kilcarr](#) September 29th, 2008

“The really big thing is you don’t know your driving a 2010 emissions truck.” -Jimmie Kissling, a 12-year veteran truck driver with general contractor Haines & Kibblehouse, based in Skippack, PA

So it’s a little after six in the a.m. when **Jimmie Kissling** and I get rolling down the still-dark rural roads for the first job of the day - getting a load of asphalt “binder” for a parking lot expansion project at a shopping mall located some 40 minutes northwest of Philadelphia.



[And what’s with all of these bleary early-morning stories anyways? Talk about a run of bad Karma on my part!]

It's a pretty routine job for Kissling. This is a guy that's driven trucks for over 30 years, everything from long-haul over-the-road routes for General Battery, local and regional driving for landscapers, to over a decade worth of tasks at **Haines & Kibblehouse** in Skippack, PA (a subsidiary of the [H&K Group](#), an almost legendary family-owned firm in the construction world.)

[Below is Jimmie's take on his new truck and the SCR system in his own words.]

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Jimmie makes hauling and delivering several tons of asphalt look easy, with shifts and acceleration as smooth as silk with nary a hitch in the chassis. For nearly eight years, though, he pulled the company's big construction equipment - road pavers, bulldozers, you name it - on lowboy flatbeds behind the wheel of Class 8 tractors till he hurt his back. Now he pilots big four-axle dump trucks all over Chester and Elks County (to name just a few) for H & K, hauling a wide variety of materials - asphalt, construction debris, you name it. Rain or shine, plowing snow or hauling whatever, nothing rattles him.

That includes the selective catalytic reduction [SCR] system that's underneath the Mack Granite Axle Back four-axle end dump truck model we're sitting in, too.



[In this photo, what looks like a big black tank is the SCR catalyst. If you look closely, you can see the silvery shape of the DPF behind the steps.]

Under and along the passenger side of Kissling's 14,040-pound GVW beast rests the diesel particulate filter [DPF] - hidden cleverly behind the steps used to enter the cab - and the SCR catalyst, which looks like nothing more than a big black box, rounded at the edges. On the driver side, forward of the big 116-gallon steel diesel fuel tank, is a smaller reservoir holding 17 gallons of diesel exhaust fluid [DEF] - an ammonia-based liquid that reduces oxides of nitrogen [NOx] emissions when injected into the exhaust stream.



[The tank with the baby blue cap on it holds the DEF. Mack also plans to use a D-shaped fuel tank for its 2010 production models, with the straight edge of the D facing out. That will offer more fuel capacity while leaving room behind the tank for cable bundles, hoses, etc.]

Due for a new truck based on his years of service at H & K, Jimmie told me he jumped at the chance to be a "test pilot" in his own words. "The guys do rib me about being a 'test pilot' but I always like to try something new," he explained. "It's a great opportunity."



[Jimmie Kissling is pleased as punch with his 2010 test truck.]

Aside from taking copious notes every day concerning mileage, type of operation, fuel consumed, etc., there hasn't been much to do related to the 2010 technology on board. "You don't even notice it," Jimmie told me. "One thing that has changed, though, is I don't have to

hit the 'active regeneration' switch anymore. The filter [DPF] pretty much cleans itself all the time now."



[The blue switch Jimmie is pointing to started and stopped active regeneration of the DPF. With the SCR system on board, however, he almost never needs to press it now.]

That's one of the big benefits [Mack Trucks](#) is noticing just five months into its 18-month SCR pilot test with H&K. "We're using less DEF than we thought and we've reduced demand for active regeneration by 80% to 100% in some cases," [David McKenna](#), Mack's powertrain sales and marketing manager, told me. "We're also seeing up to an 18% improvement in fuel economy over pre-2007 engines and up to a 5% fuel economy improvement over our 2007 engine package, depending on the duty cycle."

According to Kissling's numbers, that adds up to about a 5.4 miles per gallon average for his truck - across a day spent under load (over 60,000 pounds) and empty, pattering in stop-and-go traffic on local roads to roaring along at 60 miles per hour on the highway. "Think about this for a minute," McKenna stressed to me. "This is what you're getting in a four-axle dump truck. Translate these kinds of fuel savings to an over-the-road environment, where the engines operate at a much steadier state more frequently, and you can see why we're excited."

One issue that has some operators concerned is what happens to the DEF - and the SCR system as a whole - if the solution freezes. Vocational trucks, especially, operate in some pretty cold spots across the U.S. and at 12 degrees Fahrenheit, DEF first becomes "slushy" before becoming a waxy, paste-like substance as the mercury dips further, McKenna said.



[The monogram on the dashboard let's you know whose baby this truck REALLY is.]

“The key thing to remember, however, is that DEF is there to neutralize NOx, which is created by high engine combustion temperatures,” he explained. “That means a COLD engine isn’t going to produce NOx, so you don’t need that DEF right away.”

Part of Mack’s solution, then, is to make sure the supply pump runs after the engine shuts down, returned any unused DEF from the injectors to the tank to empty the supply line, so it doesn’t get clogged with cold waxy fluid. Then, at start up, a tank heater warms up the DEF little by little so by the time the truck is ready to roll, enough DEF is ready for use. “It’s really a non-issue in terms of proper SCR operation,” McKenna said.

DEF consumption is pretty much a non-issue as well. **Dan Alderfer**, fleet superintendent for Haines & Kibblehouse, told me that while they keep the DEF tank topped off for testing purposes, it could really go for two weeks before requiring a fill up. “Refilling the tank doesn’t change our work practices either - it’s not an imposition at all to our fleet,” he added

For Kissling, though, the real issue is power. With a 407 horsepower Mack MP7 engine under the hood married to a 10-speed Mack T-310MRL transmission with multi-speed reverse, Jimmie told me his Granite struggles on the road not a whit. “It’s got excellent power - that’s what you need in this job,” he said. “You’ve got to get over the hills and up to speed on the highway under load. It does that with plenty of horsepower to spare.”

His truck also has lots of “gingerbread” as Jimmie likes to say - electric windows, remote-controlled side mirrors, a super-comfortable Bostrom Talladega mid-back air ride seat, and AM/FM radio with CD player (a radio he keeps tuned to a country-western and classic rock station that cranks out tunes from the 1950s and 60s.)



[One thing asphalt hauling requires is the driver to hop out and clean off the tailgate after a load is delivered, so the residue won't gum things up. You always wear a hard hat, glasses, and gloves when doing it though, for fresh asphalt is delivered at 325 to 350 degrees Fahrenheit.]

There are a couple of critical things this truck doesn't have, though. First and foremost, there's no diesel smell - period. Not at idle, not when the engine revs up to power the dump bed's hydraulics, not while accelerating on the road. No black smoke either - the exhaust pipes and areas around the pipe opening are free of any carbon deposits, even after 50,000 miles of hard operation.



[The faint cloud you may see around the truck isn't exhaust — it's steam from the super-hot asphalt.]

“You can literally put your face to the exhaust pipe opening while the truck's at idle and smell nothing. I know - I'm the idiot that did it,” McKenna told me. “I don't think as an industry we talk enough about this - that the air coming out of the exhaust pipe is, in many cases, cleaner than what's going into the engine on these [2010] trucks. Shame on us - this is an incredible story. And by telling it, we hope to get everyone back off the ledge in terms of their concern about 2010 emission technology.”



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1. Thundurbyrd Says:

[September 29th, 2008 at 1:30 pm](#)

Where is the DEF going to be available at, and what is the cost on this?

Nick Rett

www.qtequipment.com

2. [New Trucks](#) Says:

[September 30th, 2008 at 6:52 am](#)

Yes the technology has improved greatly over the past few years.

3. Steve Grantham Says:

[October 1st, 2008 at 2:54 pm](#)

We have one of these in our fleet except it's a ROLF body. It does really good until we have to slip a driver. Then we usually have to take it to the Mack house to have it reset at some point. The regular driver on the truck does real good with it.