

October 2010

2010 Engine ScoreCard

We ask fleets:
How are the
new engines
doing?

For most fleets, the 2010 engines are still a mystery. Many don't want the expenses or the potential problems of the new technologies developed to meet the Environmental Protection Agency's latest emissions standards any time soon. And nobody really wants to spend the additional up front that the 2010 technologies cost.

But some brave folks got in early, though even then somewhat cautiously. "We wanted to dip our toes into the water, not get in up to our necks," explained Kirk Altrichter, vice president of maintenance at Gordon Trucking, a regional truckload carrier based in Washington state, which has four 2010-powered trucks.

Two are Cummins ISX 15s and two are Detroit Diesel DD15s. They are all production engines, having been acquired in Freightliner Cascadias early in the year,

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and had 60,000 - 70,000 miles on them at the end of August when we set out to canvass fleet experiences with the new engines.

Early fleet orders for production trucks with multiple truck deliveries are just starting to trickle in. As far as we could determine, no International trucks with 11- or 13-liter 2010 engines have yet made it to fleets or dealers. According to press and analyst reports, International has decided to put a delivery hold on trucks manufactured to date with MaxxForce 2010s based on the MAN engines, until they are sure the quality is to the desired level. Navistar declined to be included in this roundup.

For those fleets that have 2010s, all the experience to date has been with trucks equipped with selective catalytic reduction. That's the urea/catalyst reduction of NOx in the exhaust stream—commonly called aftertreatment—using diesel exhaust fluid.

Engine experiences

Gordon's Altrichter may have been reluctant to get in up to the neck, but the experience with his early production 2010 Cummins and Detroit's has not been at all bad, he said. The cooperation of the manufacturers in solving the early issues has been "stellar — not a comment I would have made about the last couple of times the technology changed." Altrichter, though, with his military background, is one to have his ducks in a row, too. Those 2010s were all deployed on the I-5 corridor, a busy lane for the fleet. Altrichter had made sure diesel exhaust fluid was available in bulk totes at the terminals wherever the trucks showed up. In addition, each of the four 2010 trucks carries a 4-gallon jug of DEF so that they never run low on the fluid. In answer to a question about experiences with low-level warnings or even "inducements" (things like engine de-rates to force drivers to refill with DEF), he said that they don't anticipate such experiences.

"We don't plan ever to see one," he said. And as the DEF bulk infrastructure rolls out at truckstops and

more 2010s come into the fleet, the plan at Gordon is to eliminate those on-board jugs from the trucks.

Similar planning at Ryder has meant that customers are assured of supplies of the catalytic reduction reagent before they get the trucks. All Ryder facilities that see 2010s have DEF supplies, said Scott Perry, director of vehicle supply management for the leasing company. While the nearly 500 2010s Ryder already has might seem like a lot, Perry pointed out that this is only a tiny percentage of the 150,000 vehicles in the fleet. He's expecting significantly more of the latest technology trucks coming into his fleet over the next 90 days.

Most of the Ryder power is Cummins ISX and Detroit Diesel 15-liter. He said these early deliveries were very much a result of working closely with the engine manufacturers, and Ryder has had considerable access for observation and technical review. Included among the OEMs is International because, Perry said, Ryder intends to have all OEMs represented in the fleet. With such a broad base of customers, "We have to have a smattering of everything." So he has been talking with Navistar and reviewing International with a view to spec'ing the 11- and 13-liter engines. Already, though, there are trucks powered by the smaller MaxxForce DI featuring advanced EGR in Ryder's hands.

Of the engines deployed in the fleet today, said Perry, most of the interaction with the manufacturers was "in regards to updates, implementation, software and calibrations."

Happy customers

We got similar stories from most of the fleets we talked to. Most have reported few real issues, and much on-going interaction with the engine OEMs as they tweak the engines for improved fuel consumption or refined dosing of the DEF to minimize its use.

At Maverick Transportation, a 1,200-power-unit flatbed fleet based in Arkansas, Director of Maintenance Brent Hilton said that more extensive

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work been done to some of the trucks – Freightliner Cascadias – though he wasn't always told just what was being done. When we talked, he had one of his 75 2010 trucks in the Freightliner dealer's shop. There, Detroit technicians were changing out pistons in a DD15 – although he was quite frank about the fact that they cannot always determine what is going on with the trucks he runs as development vehicles for Detroit Diesel.

Maverick is a Freightliner fleet and has had considerable experience with Detroit Series 60 and Mercedes-Benz MBE 4000 engines over the years. The fleet has been transitioning into DD15, now with 250, predominantly engines introduced at the EPA '07 level. While replacements have been running somewhat behind lately thanks to the recession, rising maintenance costs will see the entire fleet replaced in a couple of years, Hilton said.

Hilton is quite happy with the new engines. Most of the few issues he's had have more to do with the chassis than the engine, he noted, and they were of a minor nature. There was one issue of a Detroit Diesel service point not have a tool to remove a head, but "overall I think Detroit Diesel did an outstanding job of training the field on this product," he said.

Paccar also gets high marks from fleets that are transitioning into the new 12.9-liter MX. These are all-new in the United States, using SCR technology to meet the NO_x levels for 2010. But while new on this side of the Atlantic, the engines have been in fleets nearly four years in Europe, where they are earning an excellent reputation in Paccar's DAF-brand trucks. And because Euro 5 dictated SCR over there, there's also a considerable body of experience with aftertreatment technology.

One particularly tough application is a milk haul by Ontario, Canada-based Stotesbury Transfer. There, the province's high gross weight allowances mean the loaded trucks run at up to 139,000 pounds. The company is relatively small, with 23-25 power

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units, said President Brian Stotesbury. The fleet is predominantly Paccar, with Peterbilt the preferred brand. Power till now has been Caterpillar and Cummins. Most are pre-'07, since the fuel penalty post-'07 discouraged the purchase.

Two MX engines have been in test at Stotesbury for around a year, with a third was delivered just as he was interviewed for the story. He said the engines were performing very well and the drivers liked them a lot, with a pulling ability that was stronger than the 485-horsepower and 1,650 pounds-feet spec suggested. He also likes the fuel economy, which is much better than the two '07 engines, and he likes the weight savings of the MX over previous power.

There have been issues with warning lights coming on and a DEF sensor failure. Some issues with wiring were identified early, and Stotesbury gives the Paccar field engineers high praise for identifying problems and getting fixes in place and into production.

There have been no driver issues with low DEF or getting the wrong fluid into the different tanks. In fact, he said, the drivers really like the MX because it is "unbelievably" quiet, and "the torque is longer and sooner and pulls really well." Also, the engine is very responsive. These traits have shown up as improved driver productivity, said Stotesbury.

Another carrier running the Paccar engines is Halvor Lines, a 340-truck fleet out of Superior, Wis. His 2010 representation is three Paccar MX and a couple of Cummins ISX 15s.

CEO Cameron Fraley said the fleet has been all Caterpillar, so any experience of late has been an improvement, but the MX engines are big favorites. "Drivers have been very happy with the power and pulling ability." As for reliability, there have been no major issues with either MX or ISX. "Right out of the box they have their little glitches. But there have been zero mission-disabling problems. The Cummins have had to stop in the shops for warning lights and sensors," he said. "Overall, though, they've been pretty darn good." He wryly added that compared to 2007 emissions Caterpillars (which have landed Cat with a lawsuit from unhappy customers), it has been a pleasant experience. And he is very happy with the fuel

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economy of these early 2010s – especially the MXs.

Anticipation in Joplin

At Con-way Truckload, there has been some anticipation of the International 13-liter with a substantial 150-truck order for ProStars, matched by one for Kenworths with Cummins ISX. Bruce Stockton, vice president of maintenance and asset management, said they are keen to try the different technologies to see if there is a clear winner at the end of six months. He agrees the International pick appears to be a brave decision, but at the end of the test, he will have a much clearer direction of which technology to choose, unlike other fleets that appear to have rolled the dice on which technology to adopt without even trying the MaxxForce technology.

The order for the Internationals is built, he said, but not cleared for release, waiting on what he understands is an engine calibration validation. "Whatever that means," he added. Stockton is also keen to get his hands on the promised 15-liter MaxxForce, though he understands it will not be available at least until the new year. It is based on Caterpillar C15 iron, and the carrier has had recent

experience with Caterpillar, though not much post '07. "We didn't buy a lot of trucks in '08 and '09, but the 2,600 trucks in the fleet will need to be replaced." Stockton is anticipating getting the 300 trucks before the end of the year to do the SCR and A-EGR comparison.

In the meantime, his 2010 experience is a lone development ISX the carrier has been running in association with Cummins. It is on a dedicated run through the home terminal of Joplin, Mo., every week. Stockton said the truck carries plastic jugs of DEF but that is not the direction he wants to go with DEF supplies. He's also looking for DEF pricing to reach parity with diesel fuel so the promised economics can be realized.

Drivers and DEF

Stockton referred to the "stones thrown about how Navistar did the (water instead of DEF) test," where a Freightliner was run, seemingly without trouble, with

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pure water in the DEF tank, Stockton is concerned that drivers will see that and try to use water instead of the recommended fluid. There's also the issue of drivers deliberately sabotaging trucks by contaminating the DEF, stealing it, or otherwise crippling the truck.

He said the experience with just the one 2010 shows that there will have to be some serious effort to train drivers what to expect. Stockton anticipates up to four hours with each driver as the 2010s roll in, impacting productivity in the short term.

Halvor Lines' said that for the five trucks in his fleet, drivers were chosen with care. "These guys were happy to give it a try. We spent some time with them so they understood what was required."

Scott Perry at Ryder said the key to a smooth transition is a good, detailed driver orientation. Doing so has avoided any issues with co-mingling the fluids. And while there have been incidents of trucks running low on DEF, the thorough orientation will prepare drivers for what is going on as the "inducements to refill" kick in. "Recognizing exactly what is going on is important," he said. "Once understood, it is easy to remedy. It plays back to good orientation."

Other fleet experience has been generally good, though in all cases, drivers have been chosen carefully for the new technology and then the projects have been closely monitored. As Altrichter said, "It's best to change just one thing at a time, especially as a driver can make an up to 30 percent difference in fuel economy."

But the news is encouraging. The early fears of DEF availability proved to be well founded, but the situation is getting better by the day, and the fleets have played it cautiously with additional DEF on the trucks. But that is not a situation they plan to continue as the infrastructure rolls out.

The subject of driver handling of the fluid has also not been an issue, though Bruce Stockton said it is important to deal with DEF spills on the truck. His experience shows that it is clearly corrosive. "When we installed the first tank in the shop, we found drips would eat the paint off the floor and turn drivers'

boots white."

The care that fleets like Ryder and Gordon Trucking have applied in ensuring DEF is where the trucks will operate has been to their benefit. But while it's just "toes in the water" for the moment, as more and more 2010s get into the population, it is clear that more bulk DEF will be available at truckstops.

And it is very likely that the very slow ramp-up of the 2010 truck population has helped in this respect. Most of the fleets we interviewed are the early adopters, and even they started small. For fleets taking a wait and see attitude — especially in the very slow economic recovery right now — it will be next year before any serious truck buying brings significant numbers of 2010s on to the highways.

So far, so good

To date, all the 2010/2011 model-year experience has been with trucks that use aftertreatment and diesel exhaust fluid as the technology to meet the new emissions regulation. The experience has been remarkably positive.

All respondents talked of the cooperation between the engine manufacturers and the fleets. That's not too surprising, since many of the engines in the field are either development or early production that is being carefully watched for early problems.

While the engines have moved from prototypes and production-intent to full production, there still appears to be some "turning of the dials," to borrow Stockton's phrase. This is in response to early disappointing fuel consumption and dosage rates of DEF.

Based on our interviews, most manufacturers get a much better than passing grade for both the engines and their support. Issues with DEF have been overblown, but it is still early days and the main roll-out of 2010 engines later this year and into next may improve the DEF situation or may actually strain supplies. But it is the fleets' intentions not to carry standby DEF on the trucks in the long run if at all possible.

And there's still the big question mark of the all-EGR technology and Navistar's big-bore engines. ■

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