

COUNT  
DOWN

FLEET OWNER'S QUARTERLY ENGINE UPDATE

# Liftoff...

**I**t's been a long process that's taken a lot of hard work by many people and many segments of the supplier community, but the deadline for the 2007 diesel engine emissions requirements is finally here. Not only are engines of all sizes in place, but the reformulated diesel fuel and engine oil they require have also been brought to market on time and without major incident.

It is a major accomplishment, and everyone who contributed should be proud, not just because they've delivered on promises of reliability and durability, but also because they're helping bring about a major improvement in air quality.

Of course, all of this comes at a price. Trucks with '07 engines not only cost more to buy, but also more to run, although only real-world experience will tell us just how much more. Still, if you want to stay in the trucking business, your old trucks will have to be replaced by ones with the new engines no matter what the cost.

As the year goes on, Fleet Owner will issue a report card on how the '07 engines are actually doing as significant numbers make their way into daily service. However, as we wind up our Countdown '07 series with this 11th and final edition, we should take a moment to focus on just what was achieved over the past three years.

Engine makers have designed, built and proven systems that meet the most stringent emissions standards in the world without compromising performance. Refiners have removed all but traces of sulfur from diesel fuel, and distributors have moved it to their storage tanks and pumps without disrupting the supply chain. Lubricant suppliers have reformulated their engine oils to live under very different conditions. And, finally, truck makers have adapted or redesigned their vehicles to use all of these elements to deliver on promises of reliability for their customers and cleaner air for all.

# 2007 Trucks:

**Pricing for** Ford's F-Series truck line equipped with the more expensive clean diesel engines demanded by '07 emissions

**Ford** regs remained up in the air as of press time. However, the OEM has some suggestions to help keep the diesels in top working order.

"Customers will have a new part to service, the DPF," says Mike Harrison, Power Stroke chief engineer for Ford North American Diesel. But if they use ULSD fuel

and CJ-4 oil in the trucks, the DPF shouldn't have to be serviced before 120,000 mi.

Harrison recommends replacing the fuel filter at every other oil filter change, which has been extended to 10,000 mi. for normal operation. For heavy-duty operation, intervals stay at 5,000 mi.

To prevent corrosion of fuel system components, the water separator on the primary fuel-conditioning module should be emptied once a month or when the warning light comes on.

With an exhaust system design for the F-Series that precludes the addition of chrome tip covers, it's important to keep openings clear of mud and debris, since an air infusion device draws cold air into the exhaust to help cool it when the truck is in regeneration mode.

Harrison also suggests that when operating in hot climates or after a stint of high-speed driving, operators should let the truck idle for about three minutes before shutting it off.

**Freightliner LLC** is making "production rate adjustments" in the face of the anticipated drop-off in demand for 2008 model-year trucks powered by EPA '07-compliant engines.

**Freightliner LLC** Last month, the company, which is the parent firm of Freightliner Trucks, Sterling Trucks and Western Star Trucks, formally announced that 800 employees would be idled at its St. Thomas, ON, plant. That facility, operated by Freightliner Canada Ltd., produces the OEM's Sterling-brand heavy- and medium-duty trucks.

According to Freightliner LLC, the St. Thomas layoffs are "the first in a series of such measures that will affect all the company's vehicle and component assembly plants during the first quarter of 2007. As many as 4,000 production and related workers may be affected."

The company points out that "all manufacturers of heavy and medium trucks, as well as the suppliers of components used in their assembly, are facing a dramatic reduction in volumes presently. Truck buyers in all markets are showing hesitation to pur-

chase trucks equipped with the new engine technology necessary to meet the diesel exhaust emissions standards that go into effect in Canada and the United States on January 1, 2007."

"Workforce reductions are always the last thing any of us want to do," says Chris Patterson, Freightliner LLC president & CEO. "Unfortunately, it has become necessary at this point as the entire industry is dealing with an extraordinary market situation.

"We will continue to monitor the market closely and make adjustments accordingly, but we anticipate further reductions of up to 3,200 workers in the first few months of 2007," Patterson continues.

"We are anticipating that demand will begin to recover in the second half of the year as our customers gain confidence in the new technology and their existing vehicles suffer the effects of aging," he adds. "We expect to be able to make some positive workforce adjustments at that time".

According to Freightliner, its Freightliner, Sterling and Western Star vehicles—depending on specs and weight class—have been "subjected to price increases ranging from \$4,600 to \$12,500 (before application of taxes)" thanks to the new EPA '07-compliant engines.



Since last fall, General Motors has been doing "manufacturing validation" builds of its '07-compliant truck models and

## General Motors

the process has been going very well, according to Mike Eaves, product manager for medium-duty trucks.

The manufacturing validation builds are the last major preparation step at GM. The new truck models are built on the assembly

line to make sure that the plant has no issues with how parts and components come in or how the chassis moves down the line.

"We actually do a number of these validation builds because we have a lot of model variations," say Eaves. "We did the first one back in October, a few more in mid-December, and we'll do a few more in early January 2007. We have three different diesel engines we are phasing in," he continues. "Quality is our over-riding objective."

GM dealers will be able to preview the company's new product lineup at the annual dealer meeting in Las Vegas January 22 to 24. The public debut of the new trucks will be at the NTEA conference this spring.

After all the months of preparation for 2007, what's next on the OEM's to-do list? "We're starting to work on 2010," says Eaves, "especially on the packaging." He points out that 2010 will mean another whole new exhaust system.

The first Hino trucks for the U.S. and Canadian markets to be equipped with '07-spec engines will be its 2008 model-year mid-range and medium-duty conventionals, which begin production in March.

## Hino

The trucks are being assembled at Hino Motor Sales USA's Long Beach, CA, and Woodstock, ON, plants, with a third plant planned to open before the end of the year. Both the Hino 5- and 8-liter diesel will be offered in the low-emissions spec.

In December, the company came away from a five-city tour to show dealers and customers Hino's approach to meeting the new emissions standards with

over 1,100 orders for the '08 models, according to Nick Vermet, sr.-vp for sales, marketing & customer service. The technology displayed on its Class 6 and 7 conventionals is already in commercial use in Japan, where 16,000 trucks with Hino's combination of cooled EGR and diesel particulate filter (DPF) have accumulated over 160-million miles.

Hino's DPF has no schedule for cleaning beyond a 200,000-mi. diagnostic check of backpressure. If the DPF is out of spec at that time, it will be exchanged or cleaned by the dealer, Vermet says. If it meets performance requirements, a diagnostic check will not be required for another 200,000 mi.

International Truck & Engine Corp. is planning to slowly ramp up production of its 2008-model ProStar highway tractor.

## International

After starting with two units a day, the Chatham, ON, plant will gradually increase output to 40 a week by the end of January, says Steve

Gilligan, assistant gm for the heavy vehicle division.

One reason International is taking a "go slow" approach is that the first 30 vehicles off the production line will undergo three pre-delivery checks at the factory, and three more at the dealership. It's all part of an effort to make sure the final fit and finish is where it needs to be. "It's not just that the

engines and exhaust systems are new...everything is brand new," Gilligan explains.

"Right now we have 2,000 ProStar orders on hand, he says. "We're working with all of our component suppliers in minute detail to make sure there's no hiccup in deliveries. We're trying to match our component supply with the build rate."



## 2007 Trucks:

Gilligan notes that the ProStar is designed to accommodate three '07 engine packages: the Cummins ISX line, Caterpillar's C-13 and C-16, and International's proprietary MaxxForce line, built in partnership with German engine maker MAN. "That's definitely a challenge but one we think offers

more options to the customer," he explains.

Gilligan points out that the primary focus of International's ProStar design effort has been fuel economy, despite the limitations imposed by the new emission controls and ULSD fuel, which has less energy content than previous

diesel blends.

"We've improved aerodynamics by 9% on our ProStar tractor against current models...specifically to help counteract the fuel economy losses from '07 emission requirements," he says. "That equates to about a 4.5% improvement in fuel efficiency."

**Before this** month is out, Isuzu dealers will have the chance to preview the company's new product lineup at the annual dealer meeting for Isuzu Commercial Truck of America, to be held in Las Vegas January 22 to 24. Ordering for the all-new 2008 models, complete with the new emissions systems, will open up by the end of that same week, according to Dan Cutler, executive director of product development for the company. The public debut of the new trucks will be at the NTEA conference this spring.

Although the models are being kept under wraps until then, a few select suppliers of specialty truck bodies did have an opportunity to see the new engine and

exhaust system and chassis drawings last October in California. The new cab, however, was kept shrouded. "We are sticking with our promise to work with various specialized body builders to make this emission system change as easy for them as possible," Cutler says.

"Our engineers have designed some alternative layouts and next year we plan to visit every major body builder to give them those layouts," Cutler adds. "We have great confidence in the technology itself, which is proven and tested, now we are focusing on helping all our body builders fine-tune the fitting of the new exhaust system with the particular equipment they build and install on our chassis. This project really takes the whole team working together."

**According** to Kenworth Truck Co., the OEM "will deliver new engines in 2008 model-year trucks, including the new T660 in

## Kenworth

January," says Bob Christensen, Kenworth gm and Paccar vp. "Ramp-up will continue during the first quarter."

Kenworth has worked to keep its dealer body and customer base well-informed about the engine changeover and its ramifications,

"conducting several regional and individual training sessions beginning this past summer," he says.

"These sessions provide opportunities for dealers and customers to review their requirements directly with Kenworth engineers," Christensen continues. "In addition, we have hosted customer ride-and-drive events at each Kenworth plant. Equipment installation is very important with the new emission packages and Kenworth recently released a comprehensive body builder manual available

at Kenworth dealers."

In terms of warranty coverage, Christensen says that "Cummins and Caterpillar provide warranty coverage and offer programs for their '07 engines for Class 8 trucks." He also points out that "Kenworth is introducing the new Paccar engines exclusively in the medium-duty T300 Class 6 and 7 models. The Paccar PX-8 engine comes with a 2-yr./250,000-mi. warranty. The Paccar PX-6 engine has a 2-yr. warranty with unlimited miles."



**"Never in our** history have we compressed so much change in our models as we have in the last three years," says David McKenna, powertrain sales and marketing manager for Mack Trucks. Not only is the new Mack engine (a platform it will share with Volvo Trucks of North America) "a clean sheet of paper" design, but "nothing on our trucks outside of rear axle assemblies was not updated or entirely replaced in the last three years," he says. "And the axle assemblies will be updated before the end of 2007."

Despite the full plate, "the new trucks are working well and there are no real issues," McKenna points out. "It's just fine-tuning software now" for the new 11-, 13- and 16-liter engines being introduced in the

new year's models.

Although the number of Mack trucks with '07 engines in fleet tests is small, the sample is diverse and continues to run up miles, according to McKenna. "We have trucks in on-highway and LTL operations, dump trucks and roll-offs running, commercial refuse and front loader in customer revenue service, and all continue to work well," he says. In particular, "overall satisfaction with the engines is extremely high, with the worst cases showing fuel economy equal to the 2006 Aset engines of similar horsepower."

Mack production lines had already begun limited production of trucks with the new '07-spec engines in December, and "we'll hit full production sometime in the first quarter," McKenna says.

**The arrival** of the 2007 compliance deadline is not a big event for Mitsubishi Fuso, according to Robert J. Aquaro. vp-prod-

## Mitsubishi Fuso

uct assurance for Mitsubishi Fuso Truck of America (MFTA). In fact, it is just "business as usual," he notes. There was not even a significant pre-buy. "We have a couple

of customers who bought more equipment than usual perhaps, but I don't think it was because of the 2007 emissions standards," he offers.

"Heavy-duty buyers are truckers," Aquaro says. "Light-duty buyers tend to see trucks as another tool they need for their business. They buy trucks when they need them, whenever that happens to be. Even medium-duty buyers are not as affected by

EPA '07; their focus is ...on other aspects of their business.

"Our model year changeover always takes place in mid-year," he explains, "and 2007 will be no exception. The new engines will be installed beginning with our model-year 2008 trucks, which will be available sometime in the late spring or early summer. There will still be model-year 2007 trucks available for at least part of the year, too."

**According** to Peterbilt Motors Co., the OEM is finding that customers remain concerned about the base sticker-price increases needed to cover the expensive emissions control systems to be EPA '07-compliant—not the performance of the technology itself.

On the other hand, Peterbilt believes the price increases for '08 trucks with '07 engines may not im-

pact fleets as sharply as they fear, since it expects freight demand will remain high through next year and that, coupled with continued tight trucking capacity, should protect rates.

Peterbilt notes that its retiring version of the Model 379—the Legacy Class Edition—will be powered with '06 engines, not the more expensive low-emission models mandated for new heavy- and medium-duty trucks starting this month. "We're allowed to build trucks equipped with '06 engines right up to the end of



the year—Dec. 31 2006, to be exact,” said Dan Sobic, Peterbilt gm. “We’re also allowed some spillover into ’07 as many of these trucks won’t be delivered until next year.” He said about 50% of these Legacy Edition trucks will be equipped with Cummins engines

and the rest with Caterpillar engines.

Peterbilt medium-duty trucks for the ’08 model year will feature two new midrange diesels, the Pac-car PX-8 and PX-6, built exclusively for the OEM by Cummins.

**Dave Trussell**, director of marketing for UD Trucks, says the company’s 2008 model

## UD Trucks

trucks equipped with ’07 engines are going to roll out in two stages this year, with the lighter medium-duty units coming out first. “We’re going to start putting our smaller GVW trucks into dealer inventory...roughly around July,” he ex-

plains. “Our heavier GVW models will start arriving on dealer lots in August and September.”

UD dealers will remain the “first line of defense” when it comes to educating customers about how to adjust their operating procedures in the context of ’07 emissions control technology. “They are the ones who must educate the customer at time of delivery. We’ll have a card included in the truck delivery documents describ-

ing what happens when active regeneration occurs, but the dealers and salesmen must put that in the hands of the customer and explain what it means,” says Trussell.

Managing the active regeneration cycle is the critical point. “For most medium-duty users, you’re in stop-and-go mode all day. The engine doesn’t generate anywhere near the temperature you need, so active regeneration is necessary,” he notes.

“I’ll be eager to see these [’07 engines] out on the road,” says Ed Saxman, product manager-drivetrain for Volvo Trucks North America (VTNA). “They represent a lot of work by a lot of people.”

**Volvo** As the truck maker wrapped up its test and customer-demonstration phase last month, “we’ve concluded that there are no big surprises,” Saxman says. In preparing all-new Volvo engines for the rigors of meeting the ’07 emissions standards, “we made some changes that needed to be made,” he says. For example, a 20% increase in fuel injection pressures to 35,000 psi required moving to a rear-mounted gear drive for the camshaft. “That’s worked pretty well,” he says, on the 11-, 13- and 16-liter diesels Volvo will offer in North America.

Diesel particulate filters (DPFs) also underwent some fine-tuning during the final months, and now “are working well,” Saxman says. In over-the-road operation, which normally includes some stop-and-go

conditions, the Volvo system saw automatic actuation of its active regeneration system once every day or two in the tests.

“There’s no real indication yet on how far out [DPFs] will run before they need to be removed for cleaning,” Saxman adds. “It’s so dependent on the oil you’re using, and that [CJ-4] oil is just coming on the market now.” However, VTNA is telling customers that in normal circumstances, the first owner of a VN or VT truck with a Volvo diesel can expect to clean the DPF just once, assuming a 400,000-mi. trade cycle.

Along with the lower emissions engine, VTNA will provide at no charge a proprietary telematics system and 24/7 roadside assistance for three years for all of its trucks with ’07-spec Volvo or Cummins diesels. The two complement the new engine technology, a spokesman says, by integrating technology and customer support to provide remote diagnostics and around-the-clock access to VTNA’s dealer network.