

Dispatch

BY MARCO BEGHETTO

Pandora's ECM

Ontario's new speed limiter law allows inspectors unfettered access to hundreds of vehicle settings and parameters as well as historic trip and operational data.

Carriers spend a lot of time and money protecting operational and trip data collected and stored through various satellite, GPS, and cellular-based communications systems, but Ontario's new speed-limiter legislation could open up your truck's ECM to the prying eyes of Ministry of Transportation (MTO) or OPP inspectors each time it undergoes a speed limiter check.

Speed limiters are not, as they have been portrayed, microchips installed on engines to limit road speed. A speed limiter, as defined in the context of Ontario's new legislation, is simply a single setting among hundreds of other customer-programmable settings within the electronic architecture of the vehicle's engine control module (ECM).

But the setting cannot be made in isolation. Several

variables must be defined within the ECM so that the number input as the road-speed upper limit (VSL) has context. These parameters include the pulses-per-revolution of the transmission output shaft, drive-tire rolling radius, and rear-axle gear ratio.

Bill 41 grants inspectors access your truck's ECM with a cable link to either a laptop or a handheld device designed to verify compliance, such as a Pro-Link diagnostic tool. Inspectors will then scroll through the various settings displayed to ensure the VSL is set no higher than 105 km/h (65.2 mph), and the other parameters are in line with the VSL setting.

While each engine manufacturer has its own proprietary software and hardware for accessing and changing ECM settings, stored data such as the VSL, and the

other settings mentioned above, can be read and extracted without extra proprietary tools or software—or passwords—provided the reader is

compatible with the ECM.

"Law enforcement can interrogate the ECM, they can read and see what the road speed value is," Cummins advised *Today's*

PRIVATE MATTERS: The tools MTO will have to read your speed limiter settings could give them access to much more of your info.



ches

Trucking in an email response to questions. “ECM settings cannot be changed or altered with a read-only tool, but they can be read and extracted.”

MTO is currently examining Bill 41 and formulating an enforcement protocol that will allow its inspectors (and the OPP as well, presumably) to verify these setting at roadside, and will not comment how that’s to be done until the process is complete.

Unless some other method for verification is determined, the engine makers tell us

MTO will require non-password-protected access to your ECM to verify those settings. Various aftermarket readers are available that will provide that access, but the act of hooking any computer or reader to an engine ECM is bound to raise some concerns. That’s why OEs and dealers are sensitive about who is connecting to an ECM and with what. We contacted Cummins, Caterpillar, Mack, Detroit Diesel, and Volvo to learn more about MTO’s proposed speed-limiter verification process.

So, is there any possibility of ECM damage, altered settings, or corrupted data arising from an ECM inspection event?

Detroit Diesel replied, “if the fleet owner has not password-protected (changed the default password) the parameters, then it is possible for someone, such as an inspector, to change parameter settings, including maximum road speed limit.”

Inspectors would need an OE-authorized tool to write settings to the ECM, so it’s unlikely that inspectors will be able to change settings while they are connected.

Cummins’ Lou Wensler acknowledged that damage to the ECM, or the corruption of

“How much did you say this is?”



HOW MANY NEWFOUNDLANDERS DOES IT TAKE TO BUY A WATERMELON?

If fuel prices keep heading in the direction they’re going, it won’t be long before consumers start seeing those \$8 heads of lettuce on supermarket shelves, as Atlantic Provinces Trucking Association Director Peter Nelson likes to say.

Well, eight bucks for lettuce is a bargain compared to what watermelon is going for in some coastal outposts of northern Labrador.

According to the CBC, residents in the community of Nain were outraged when a local Labrador Investments store was selling a watermelon for \$55.41. You read that correctly—that’s about 40 cents per seed.

“It’s been sitting there on the shelf for the last three days, like an attraction, because so many people can’t believe the price,” Sarah Erickson, the head of the town’s Inuit community government, told CBC.

According to the report, the

watermelon was taken off the shelf after complaints from customers surfaced. The store manager later said the actual price should have been \$38. Whew, that’s a relief.

Forget those over-hyped ice road niches. Any trucker lucky enough to fall into northern Canada’s lucrative fruit-hauling sector is probably driving comfortable right about now.

Erickson said the price is extremely high considering federal and Newfoundland and Labrador subsidies are supposed to keep the cost of transporting perishable items affordable. She said that foods like watermelon often cost much more than most people in Nain can afford. Erickson is asking for a review of the food subsidy program.

In the meantime, barbecues in Nain will continue to be BYOW: Bring Your Own Watermelon.



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data was possible if correct procedures are not followed.

Mack and Volvo were in general agreement with Cummins and Detroit Diesel on the above points

(Caterpillar declined to provide input for this story), and each agreed there was little chance of a virus being transmitted from the reader to the ECM.

Dispatches

What's Behind the Number?

In addition to simply verifying the VSL setting, inspectors are required by Bill 41 to check for evidence of tampering. An investigation of this sort might be prompted if a truck is caught "accelerating to, or maintaining a speed greater than 105 km/h on level ground."

The VSL setting is not a number that can be viewed in isolation. It may read 105 (or the equivalent in computer-speak), but it is dependant on at least three other variables. If either of the entered driveshaft pulse-count, the rear-axle ratio number, or the tire revolutions per mile were inaccurate, the speed-limiter calibration would be meaningless, and this would be a significant concern to MTO.

By entering an incorrect tire size or gear ratio, the ECM can be tricked to read 105, when the truck may actually be able to travel much faster, *Today's Trucking* learned.

"How would they verify the actual rear axle ratio in my truck?" asks Dale Holman of Truck Watch Services in Georgetown, Ont. "I've changed the gear sets in two of my trucks, and short of dismantling the rear axle, how will MTO find out?"

Holman says he redeployed those trucks from a run in northern Ontario to a route into the U.S. midwest, with decidedly different terrain and operating conditions. The taller gears improve fuel efficiency on flat ground. They'll run faster, but his drivers do not run above 100 km/h, he says.



Former OPP Sgt. Cam Woolley demonstrates how speed limiter data is extracted from a truck engine's ECM.

(TMA) and The Engine Manufacturers Association (EMA) to gain some insight on enforcement policies, as well as the extent and potential for tampering.

When asked by Transport Canada if it was possible to determine specifics on if/when the speed limiter setting was tampered with, Dawn E. Friest of the Chicago-based EMA responded, "mismatched data might be an indicator of tampering, or might be the result of human error [when the values were input for example, or at the time of vehicle assembly]. There is no way to determine when tampering might have taken place."

MTO could have quite a task on its hands dismantling drive axle carriers and counting gear teeth, or rolling trucks around the

It is unlikely that Holman would be caught speeding, but if checked, he couldn't guarantee all his numbers would actually add up to 105. Is that tampering?

In 2006, Transport Canada submitted identical questionnaires to the Truck Manufacturers Association

We do the heavy lifting to



Francois Bourbeau
Senior Territory Manager
Canadian Region

inspection station counting driveshaft revolutions over a distance and then doing a little math.

Then there are the optional driver incentive settings, such as Detroit Diesel's PasSmart. Other OEs offer similar options under different brand names, but it's an ECM setting allowing a driver a specified amount of speed and time over the VSL. It's used to encourage better behavior by granting passing capability as a reward for good speed management. Those settings would have to be disabled if the spirit of Bill 41 were strictly adhered to. And it's just one more setting the inspectors would have to go looking through your ECM to find.

One engine OE rep interviewed for this story confirmed that in addition to

various engine settings, recorded data such as engine and road speed, idle intervals, hard-braking events, key-on and key-off times, etc., would also be visible without passwords or access codes.

"That data is not usually password protected, or if it is, it's just behind the default password," he said. "Most customers don't bother resetting a new password."

Even if they did, MTO could well demand it be cleared to allow VSL verification.

Plenty of concern exists over the privacy of trip data. In its deliberations on electronic on-board recorders (EOBRs) and event recorders, the Technology and Maintenance Council (TMC) of the American Trucking Associations has deemed this data to be pri-

vate. Whether it stays that way remains to be seen.

"Looks like we're letting the fox into the hen house," one engine rep told us. "I hope it promises not to grab any chickens."

— by Jim Park

Labor Highland Survives

That sure was close. One of Canada's largest truckload carriers narrowly avoided getting swallowed up by the so-called economic storm, and now that a truce has been called in its longstanding labor battle with owner-ops, Ontario's Highland Transport is hoping to gear up just in time for what is hoped to be an incremental rebound in the general freight market over the next year.

Speaking with *Today's Trucking* shortly after a majority of the carrier's unionized owner-operators voted to accept a new contract and restructured pay system, division president Jim Houston said Highland is in good shape and is poised to begin increasing marketshare again. The company has spent the last three months trying to get its owner-ops to accept changes to their collective agreement before it was set to expire in December 2008.

After voting down an initial proposal in June, the drivers were urged by their Steelworkers union to accept Highland's final offer, which, among other concessions, asked drivers to give up their 48-cent-per-liter cap on fuel for a new fuel surcharge program that requires that

give you more uptime.



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