Owner-Operator's Business Association of Canada

Association professionnelle des routiers autonomes du Canada

...from the director's chair

What's another 21 inches?

Joanne Ritchie: OBAC executive director

We're running out of real estate. That's what a truck engineer told me at last fall's Society of Automotive Engineers (SAE) conference in Chicago. SAE is a gathering of folks in-the-know – on the cutting edge of in-the-know, actually. We were talking about EPA 2007 emissions issues (who wasn't last fall?) and we drifted ahead a few years into the future. We got into the next round of emissions reductions slated to come into effect in 2010, and what problems that was going to create for industry.

Among the concerns expressed by the engineers at SAE was where to put some of the new hardware that might be required to meet the 2010 standards. One of the proposed solutions to further emission reductions involves injecting a fine mist of urea into the exhaust stream inside of some kind of catalytic container. The urea reacts with the oxides of nitrogen (NOx) in the exhaust and somehow lowers the NOx content of the exhaust, turning it into ammonia and water.

If this idea, called Selective Catalytic Reduction, comes to pass, trucks might need a larger exhaust aftertreatment device (now called a DPF), and they'll also need a storage tank for the liquid urea.

More than one of the engineers I talked to expressed concern that some Canadian truck configurations just won't have enough room for the urea tank – at least not without giving up room for something else – like fuel tanks or battery and storage boxes.

Canadians like big fuel tanks, and would be loath to halve the capacity, I'd guess. And since at least three of the OEMs already position DPFs under the passenger door where a storage box used to be, they can't put the tank there.

Even if on some configurations there is still room, I wonder what the auxiliary power system people are going to do. With fuel tanks, battery boxes, DPFs, and a urea tank, drivers might have to mount APUs inside the cab or put them on the roof.

Who better to ask about weights and dimensions than my engineer friend John Pearson who, among other things, is responsible for the care and feeding of the Task Force on Vehicle Weights and Dimensions Policy. John's a patient guy. He's written a plain-language guide called Performance Based Truck Size and Weight Regulations (affectionately known as "Trucks for Dummies") for people like me.

The Task Force regularly hosts meetings where government and industry representatives get together to identify concerns, discuss new technologies, and talk about harmonization priorities. For the past two years, when the discussion got around to tractor wheelbase limits, concerns were raised about the feasibility of maintaining a maximum tractor wheelbase limit of 6.2 m (244 inches) in light of the need to accommodate additional equipment to comply with EPA 2010. While coming up way short of a solution, committee members suggested it might be feasible to extend the tractor wheelbase – provided the trailer is shortened accordingly to preserve off-tracking performance – while maintaining overall length limits.

In the engineer's world of envelopes, we have three on the table here: the tractor wheelbase, the trailer wheelbase, and the overall length. I don't think the industry is prepared to step backward, making the 48-foot trailer the fleet standard again, so that envelope isn't going to change. But if we're forced to accommodate a urea tank where there was none before, and possibly a larger exhaust aftertreatment device, one (or possibly both) of the other envelopes might have to change.

Engineers could, maybe, design a smaller aftertreatment system, or possibly integrate the urea tank into the passenger seat, for example, but that would layer on even more cost to a system already projected to add another $5,000 to the cost of a truck in 2010.

We don't want that, so why don't we just get over it and make the tractors longer – with more frame space for stuff like urea tanks and APUs?

I get plenty of calls from drivers wondering why Canada insists on limiting the power unit wheelbase to 244 inches in the first place. It's been an irritant ever since we got 53-foot trailers. How do they arrive at these numbers anyway?

According to John, it's all about vehicle handling, turning, and stability and control performance. The regulations are designed around certain performance targets, that is, the various truck combinations have to meet or exceed targets in a number of different areas, including space required to make turns, front and rear swing-out, and so on. Okay, but why 244 inches? Well, explains John, it's about highway geometry. And rear overhang, and a touch of centre-of-gravity, and axle weights, and more.

But, I ask, what about the longer wheelbase tractors in the US? Are their performance standards so much different from ours? You see 265-inch wheelbase trucks everywhere down there, and those drivers seem to manage the extra 21 inches without too much trouble.

At the end of the day, John says, what it's all about balancing the need for an efficient and productive trucking industry with governments' obligations to protect the safety of the highway system and manage public investment in highway infrastructure.

All I'm saying is that when a longer tractor becomes a necessity, not just a preference, we may need to take another look at that balance scale and trust our drivers with another 21 inches.

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