

The Trucker in All of Us - Jumping to Class 8

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In the wide world of Railroad enthusiasts, every one of us, certainly those likely to be reading this, focus on some aspect of rail. There are modelers, spotters, photographers and mileage & timetable collectors. Our particular subgroup is drawn to the industrial railroad environment itself; our fantasies do not play out correctly on a table top. We are drawn to track cars because, as former NARCOA president, Ron Zammit, so aptly put it, "few of us will ever own a locomotive; much less a railroad. This is as good as it gets".

Consider also; you may have the unique qualities of a section man, superintendent of track or even an engineer; but for many of the hours and for most of the miles in the motorcar world, what you are before all things railroad, is a trucker. For the track car enthusiast, some sort of truck is critical to the mission. If you hate to drive, your experience in "Speederworld" may be limited.

Trucks familiar to most Americans come in 3 varieties: classes 1 to 3; half, three quarter and one ton respectively. These are the little haulers familiar to all and designed for ownership by individuals. They are as much a part of the American landscape as the lawn mower. Class 4-6; very few vehicles at this level and above are privately owned for non-commercial use. We generally entertain just one spouse at a time and private ownership of trucks stops at class three. It is important to recognize that at least in the case of trucks; these are arbitrary limits; part of our culture. The comparison to monogamous relationships is valid because there are about as many class 8 trucks in private use, as there are men with multiple wives. Suffice to say, it is rare in our town. Yet, if you are contemplating a new one-ton (class 3) for dedicated use with the track car, there may be new, more exciting and economical options for you to consider. If not consider then at least ponder in light of the economy and some of its unrecognized consequences, and the sheer excitement and luxury of the ultimate work truck. Why skip from class 3 to 8 in one jump? Wouldn't this be digging a big hole?

I was one who; long before considering a new truck, had advanced to the point where I had a dedicated truck for Railroad activities. This 1985 GMC I called Mr. Pockets (its service body was filled with small compartments)

that I had owned for 4 happy years and 60,000 miles, was dying. It would still make it to the dump twice a year with my 40-year-old red horse van (Trailer Trash) full of recyclables, but was no longer reliable for longer trips. I would not want to have it die in N. Dakota on the way from New Hampshire to Alberta.

In 2001, as the need to replace Senior Pockets was becoming more critical every trip, I observed a curious market phenomenon. As the nation's economic machine cooled, certain models of the top class of trucks, class 8, seemed to depreciate far out of proportion to the others. Prices for the \$120,000 to \$140,000 (when new) class eight tractors had hit about \$10K at age five and 450K to 550K miles.

Now, it is important to understand that though a class three truck would already be returning to the United States as a kazoo at this mileage, the design life for class 8 trucks is about a million miles, or at least five times that of class 3. Though there is certainly no sense paying for more for capacity, comfort, power & stability (not to mention the attached motel) than needed, the price for the utility remaining caused me to re-think this issue. These trucks, operated at 1/5th their design gross weight, would have speed, power, agility and most importantly, service life that would still out live a brand new pickup and take a one toner's breath away. Sure, the much older ones with steel leaf springs would make a terrible ride at anything less than full design gross weight, but today, all such trucks have rear air ride suspensions (though not in the front because of limited load variation) that adjust dynamically to give a very comfortable ride at any weight.

Having had extensive experience with such tools in my working past, I began to ponder: Would this type of truck, suitably modified for the new mission, be a good fit as a speeder chariot? Is there a way to economically operate such an apparent over killer in this role? Of course, overall cost, including fuel, would have always been the limiting factor in the past, but if the truck were half as expensive as a new class 3 truck, including fuel consumption, what else is there to consider? A CDL (commercial Driver's Licence)?

This is a major issue for most people considering this transition. But it is needless. Due to your friends at the

recreational Vehicle Industries Association. (Think NRA) It's a motor home as long as you own everything and are, in every way, non-commercial. So, no matter what your "expert" friends tell you, the answer is No CDL in this role.

These ships; Class 7 and 8, (6 and 10 wheel tractors respectively) are driven by professionals and designed for a narrow mission: pulling the largest loads over long distances at high average speeds. In this role they are, by some margin, the more pervasive movers of the nation's freight. Rail, sadly, will never have the flexibility of a truck. A rail siding is an order of magnitude more expensive than a loading dock.

High average speed differs significantly from just high speed. It is based not on raw power and velocity, but simply saving time by stopping less, and for shorter periods. Inside are beds, TV, computers of several varieties and seats that may make the chair in your office feel like a tree stump. Driving one is a pleasure that is hard to describe. The view is commanding, eye level is around 8 feet, and there are four separate air chambers (tires, suspension, cab & seat) stacked between you and the road to smooth your ride. These amenities all conspire to create a very effective speed up due to time saved recovering off road.

A class 8 truck will carry you and your motorcar up the steepest grades and safely down the other side with engine braking, leaving the brakes ice cold for stopping if needed. (At a quarter of the weight, the engine braking is several times more effective) This at a speed you choose or where ever the cruise control is set with a stability borne of running far below its design gross combination weight.

Having read this far I am going to speculate that you secretly enjoy your role as a trucker and, though you may have a difficult time getting to this in therapy (discussions with other rail fans) you are just slightly excited when you see the big rigs fly by.

I know that feeling; I have been there. But, though the real trucker endures headaches that can make driving a truck in the commercial world stressful in the extreme, in this developing scenario, forget driving when you are too tired, dealing with receiver fiefdoms, over loaded trucks with too little power, climbing hills at 20-30 miles per hour and doing three days work in each 48 hour period; all the factors that can make driving a truck the job from Hell are absent here. You can enjoy all the amenities without the headaches.

There is no obvious reason for these units to sell at a 90% discount having reached just half of design life, but that is exactly what has happened. The reasons, I have found, stem from both market and an aspect of the design. Economically, there are just too many of them right now as the freight traffic falls. As employers try to attract the very best drivers as 30 percent of a truck's operating

cost is in the hands of the driver. New tractors are the fly paper that works.

The other part of your bargain comes ergonomically from a subtle self-serving factory design tweak of the form factor that began perhaps twenty years ago. This trick has effectively snuffed out the after-life for these units, which of course, hypes new truck sales.

The phase two period or second half of the truck's useful life, follows tractor's first role as a long distance hauler. In the not too distant past, when the tractor phase was complete (read: the loan is paid off and the truck is traded or ready for trade) the unit moved into the middle-aged city tractor or straight truck phase; usually close to home. The sleeper box, historically literally a box, entered through what would have been the rear window in the cab, was simply removed and discarded and a window installed in the space, shortening the truck cab significantly and making room for a vocational truck body. It might then spend much of its remaining life carrying a box or flatbed body. It now begins a new life as a specialty or vocational truck equipped for just one mission in support of another business. A slight frame stretch can make it a wrecker, a cement mixer, a lumber or sheet rock delivery truck; no longer a trucker, just a truck.

This 'phase two' has now nearly vanished with the redesign of the cab. The melding of the sleeper box of years past into a unit cab, has eliminated the city tractor (or dump truck or cement mixer etc.) phase of life leaving little market for these condominium style ex-road tractors. Though a unit cab/sleeper makes a much more luxurious environment for the driver, there is no way to easily separate the condo from the "Front office". Much to the joy of the truck builders, the vocational bodies that used to benefit from these cast off road tractors, now get a new chassis. Who ever saw a cement mixer with a sleeper? This would not just be counter intuitive, an extra six to eight feet of wheel base (the distance from front axle to the rear axle) would not be a welcome addition for maneuverability at a construction site. A similar dysfunction would rule out condo's extra length in most straight truck applications.

Finally, drivers are attracted most to a new un-lived-in truck. Also, a truck is typically financed for four or five years. When it's paid for, there is a very powerful incentive to replace it, regardless of the life remaining or how low its trade in value. The New truck dealer will add enough on to the offer price of the used trade in to make it seem like a good deal to the new truck buyer and then sell of the used road tractor for what ever he can get; not much it seems. Sadly, this practice also adds to the apparent cost of the new truck generating lots of sales tax revenue for the state.

And therein lies the last piece of the puzzle. The industry needs fewer trucks and the ones they need are new ones.

Back in 2000, seeing these 5 to 6-year-old road tractors dipping to \$10K, I began to consider having a motorcar transporter that would carry my 3-ton Fairmont A-6F Gang Car not on a trailer, but right up there on the frame eliminating, once and for all, that aero dynamically deadly space between the tow vehicle and the trailer. That space makes the rig into two separate vehicles in any kind of cross wind. Huge savings in fuel should accrue here. Saving half on the tolls by eliminating the trailer would not hurt either. Loss of the 7000 pound trailer weight, better still.

Designed in the extreme for fuel economy some of the fleet tractors of today have rather marginal horsepower for their original mission. However, at about 25% of the design Gross Combination Weight all class 8 trucks will have comparative stoplight racer power in the speeder-to-excursion mission.

The smallest engines available in this class exceed 1100 Ft Lbs of torque, yet at the projected weight, the fuel consumption, may be better than a class 3 truck with trailer. How can that be?

Consider that all class 8 tractors have 10 wheels. No speeder fan needs this kind of lifting capability. That capacity costs fuel money too. A certain amount of fuel burned by any truck is used to operate its own components.

What if, I thought, get rid of the heavier and much more complex front drive axle (truck speak: The Power Divider) and move the rear one, air springs and all, into its place? This is relatively easy as the axles are identical from the air bags up (but not below!). There go 3,000 pounds of tires, wheels and a huge piece of iron (The "banjo"). Now shorten (or lengthen via gusset) the frame slightly so that the center of gravity of the motorcar, if placed backwards on the truck frame, is right where the trailer supporting fifth wheel was located. If the motorcar is now higher than the truck cab, add a small deflector to smooth out the airflow over the cab.

Since we are now 75% lighter in the gross weight department why not slow the engine to a less powerful speed and save still more fuel? Just one down shift away from the original punch; this would be the equivalent of discarding the lowest gear and adding a new "Big Hole" at the top. In reality, this is accomplished by changing the final drive ratio; fitting the remaining banjo with new or salvaged ring and pinion gear set (truckspeak: pumpkin). Our economy engine will now run several hundred rpm slower and burn still less fuel. Typical ratios found in class 8 trucks are in the area of 4.56 (about four and one half turns of the drive shaft for each turn of the drive wheels) & 4.11:1. Switching that to 2.91:1, I calculated, would give 53 mph per 1000 rpm, very fast! However, since the engines involved are now all electronically controlled, with an operating range from (in the case of the CAT C-12) 1000 to 1850, each gear can be governed separately. So, with our now way-too-fast gearing, let's

adjust that giant mill's 'driver judgment override' or governor, to limit the lower 9 gears to 1800 (for engine life and further economy) and the top gear to 1550 (or 78 mph). Then reset the fuel pump (done in a few minutes by a CAT Engine dealer with a laptop computer) to give max torque rise in the lower middle of the range (Truck speak: High Torque Rise) instead of the top end and there you have it. A truck that will run at 65 mph at 1200 rpm at 1/3rd the design load (1/4 without a trailer), get more powerful as it is slowed on a hill and, hopefully get 12 miles per gal overall.

Now some of you may be getting slightly better mileage, but are you having fun? Is your inner locomotive thriving?

On March 20, 2000 a friend & I flew out to Denver to pick up the dream truck pictured at the top of this article, rebuilt remotely, and re-completed with the modifications described here. Our subject hauler was crafted from a 1995 Freightliner FLD 112 ex-road tractor with integral 70" Condo/sleeper (Age: 6 years and 450,000 miles) with the miserly (everything is relative here) 365 HP, 12 liter, CAT 3176B Engine (now called C12) with 1150 ft. lbs. of peak torque (but, and this is the critical difference with class 8 truck engines, above 1100 throughout the entire driving range) and RT-910 ten-speed transmission.

The RT-910 is the simplest transmission used in class 8 trucks. It is a familiar 5-speed with a little plunger on the stick just below the shift knob. Assuming a heavy load, you use each of those 5 speeds then, while in 5th you pre-select "up plunger" and, when the time is right, shift back to 1st; only now with the plunger up, 1st becomes 6th,, 2nd is 7th, and so on up to 10th.

In the end, I had gone for a new coat of youth enhancing white Imron paint (the truck had been black), a touch of chrome to replace what was originally chromed (no flashing mud flap ladies please). The conversion was rounded out with a wrecker body from a wrecked wrecker (less booms & cables) suggesting a pickup truck heritage and to keep the tire spray from getting all over the mounted motorcar.

Inside, this is not your father's one-stack Mack with a window in the back. Just turning 90 degrees to the right in the driver's seat, it is two steps to bed. That alone, a safety factor worthy of the whole conversion. How many times in another life I had just put my head down right on the steering wheel, too tired to make that trip.

It had been 12 years since I was last behind the wheel of such a truck but everything came back quickly. At first the engine seemed so small but I slowly realized what was small was the noise I remembered from the past; back when your trailer was big and long and the tractor short. Short tractors (truck speak: Cab over/cracker box) hip hop on the bumps. Tractors such as this one were effectively banned in the east by, now obsolete, length regulations. This Freightliner had none of the problems I

remembered in the first truck I owned/ drove for several hundred thousand, what today seem brutal, miles..

Looking to the right is a computer display, now standard in many cars, that tells all about the operating efficiency of the truck. There is instant fuel mileage that ranged from 3.4 mpg accelerating up a hill in a lower gear to 5600 mpg down the other side against the governor in the 'big hole'. It was obvious that neither of these figures meant very much. Also useful: an odometers for, not just miles, but fuel and hours as well. Remember when you had to fill the tank to discover miles per gal?

Driving from our point of origin near Denver to Lincoln, Nebraska was such a rush I hardly thought of fuel, which had now crept down to about ¾ on the gage. I was anxious to see what kind of mileage we were getting. The average function on the computer was obviously set to consider the last thousand or more miles and still read just 8.9 mpg; understandable as most of the last 1,000 miles had been run with the tractor, trailer & load together, grossing near the 80,000 pound limit, loaded with fish & crushed ice in the mountains.

Finally, in the middle of the night we stopped some place in Iowa and filled the tanks. Calculations completed, it showed 13.55 mpg for the trip from Denver to Des Moines. This was a bit better than I had expected, even considering that drop from over 5,000 to less than 1000 MSL and it seemed that with the car up on the frame I should be able to hit the target of 12.5 mpg or 10 mpg with the car on a 3000-pound trailer.

From there my partner, Dick Dowst, drove and I slept as Indiana's steel mills slipped by.

We detoured twice on the trip to see track car people who might be interested in this concept and they were very polite. In Michigan Gary Greenwood said it might not fit in the drive way and the other who did not have that option allowed as how he would rather have a new truck. Too bad! His new Class three truck may cost about one third to one-half more than this class 8 Freightliner.

Getting the motorcar up on the body of the truck would be a separate challenge, I thought, as I sat in a chilly motel room in Altoona, PA on the second trip with the Freightliner, (April, 2001) the motorcar on its old trailer for now, I dreamed of an entirely new way to get from the ground to the frame. A new technology that will have the motorcar drive onto a pallet like contrivance, just an inch or two above the ground, and then, after being fully secured to the pallet, be hoisted on board by a long mechanical arm and finger called a hookloader (trade name Swaploader.com). The whole maneuver being a little like positioning a book bag on one's shoulder for the trip home from school.

Fast forward to 2011. The Freightliner is still going strong. It is 11 years and 115,000 miles older. Unscheduled maintenance has been confined to an exhaust leak and a fuel

pump leak, the latter caught by the annual computerized analysis done by CAT technicians during its annual service.

The rig is still in the trailer mode (though with a new goose neck trailer) as I have not sorted out the Swaploader concept yet and the trailer is handy to be able to transport other people's motorcars to share the fuel cost. The fuel mileage now ranges from 8.5 mpg running a flat out 78 mph, to 9.8 at 60 mph and 13 at 55. The machine is just loafing, as evidenced by the off low end of the scale oil temp, thinking, as I am, what a great way to retire....

FAQ's

Q. OK so you found this truck carcass for \$10K what did it end up costing as it is today?

A. I did not go for one of the \$10K trucks. This one was closer to \$13K as I first saw it. I wanted to have verifiable maintenance records for my first exercise in this field as well as some idea of what the truck did and where this mission was carried out. In my case the truck belonged to Jim Palmer Trucking based in Missoula, MT. (not NJ) He is known to me and operates several hundred tractors, has been in business for some time and his maintenance is, as far as I am able to discern, flawless. This particular tractor spent its life running between Missoula, MT and Seattle with a single non-smoking driver hauling ice cream West at -20F and fresh seafood (not sand and gravel) back into the mountains at 34F. As mentioned earlier, the miles were documented (as hours) in the engine's non-resettable computer at about 450K. Since the Speedometer/Odometer on a class 8 truck rarely makes it beyond 250,000 before failing and being replaced with a new one showing zero miles, it is hard to determine the exact miles. But this is on the low side for a truck of this vintage in my estimation, this would be my 19th and highest miler ever class 8 truck, so I elected to pay a slight premium for a truck that looks and feels brand new. The truck as it stands now; less sales of the unneeded components (principally front drive axle and fifth wheel) is about 60% of the cost of new class 3 pickup trucks with the works or about \$28,000. That figure is after the "pickup" body salvaged from a wrecked wrecker (by far the largest single item) and Caterpillar's 'TOPPS' job for a 100,000 additional mile warranty on the engine for \$1100. This is the easy or 'in chassis' overhaul that includes rings, bearings, gaskets, valves and cylinder honing. You could have done it for far less, perhaps 50%, especially without the wrecker body (not needed with the Swaploader) but I was very anxious for this project to progress quickly and in time for the 2001 season where Mr. Pockets was ready for last rites.

The Swaploader concept came much later and though expensive, it would replace both the body and the trailer.

Q. Where will I find room for such a behemoth in my already tight driveway?

A. If the track car is really up there on the frame and not on a trailer (see Swaploader.com; I am still working on that) the truck is only 25 feet long, the trailer is 28'.. (Together, they are 51'). Parking the truck and trailer separately at an event, the parts would be shorter than a conventional pickup truck & trailer. When the track car is in your shop on it's pallet, it could easily have shop-ping cart type casters for easy repositioning while sharing space with the family car.

Q. I have heard you need a special license to drive such a truck and a physical as well every two years. Isn't that a hassle for a hobby truck? Do you need a CDL?

A. No, no & no. Yes, though Air Brakes or Gross combination weight over 18 or 28,000 pounds (depending on the state) generally requires a Commercial Drivers License (CDL), that assumes that you are commercial. There is an exception for motor homes and other purely recreational vehicles. You do not need a CDL to drive this rig if you own it, own it's load and the entire operation is non-commercial.

Q. Don't I need to stop at weigh stations and have fuel stickers all over the truck, each requiring a quarterly or even monthly report?

A. The short answer is no. If the state in question specifies a weight but does not say "trucks" you must stop but this is very unlikely as they do not want to deal with tourists, most of whom would not know what their rigs weighed anyway. If the sign says trucks or trucks over...; just wave. Think Motor Home. You are non-commercial. Keep a copy of Ron's Zammit's Aug 2000 Train's Magazine article and a few Setoff's in the truck to convince the man in the little house with the big window that there really is a recreational world for the motorcar you have on board and ignore the weigh stations. If you get stopped, assuming you have followed my gearing and engine speed limiting recommendations and are not in the 3-digit speed zone, the central issue will be possible commercial operation, not weight. If the officer is satisfied that you are non-commercial, that will be the end of it.

Q. What about insurance?

A. Again, think motor home, check your state. My rig is insured with American Modern in Ohio.

Q. What about tolls? Doesn't a class 8 truck pay much more than, say a Dodge class 3 truck with a two-axle trailer? Remember seeing signs on the back of rigs that indicate they pay \$4500 or more in taxes annually?

A. Keep in mind you are a motor home (ToterHome?) and tourism brings \$'s to all states. Most toll roads can-

not afford to get involved in the weighing of trucks and cars to determine the toll rate. The one notable exception is The Pennsylvania Turnpike, which does a rough rolling weigh of every patron to determine toll class. Most other states make rules that ignore weight and instead look at the easily verifiable tires axles and overall height. This is good news due to a recent development from tire makers Continental and Michlein. These companies have introduced tires that replace dual wheels with a fat single tire & wheel without affecting the capacity of the truck, not a wide single but a true double. Each eliminates two sidewalls and considerable weight. So our example tractor described (and pictured) here has changed from 10-wheel tractor to a 4-wheel car (at least as far as tolls are concerned).

In the end, you will apply for an Easy Pass toll collection transceiver that will end vigorous discussions with toll collectors forever.

Q. How long will it take to become accustomed to driving a giant vehicle like this? Do these trucks come with automatic transmissions?

A. Answering the last half of the question first, yes and no. It is possible to get a truck to convert to an SUV with an automatic, but I do not recommend it.

First, though Class 8 automatics are much better than in the past, the older ones, prior to the Allison World Transmission, never achieve lockup. They are so inefficient that they would never reach a reasonable fuel consumption figure.

Second, there would be a huge premium for a half-life tractor with an automatic for just the reasons you may be thinking. In case that reason is still in your subconscious, here it is:

There is a huge part of the male population in our country, more than almost any other, that have never driven a manual transmission. No one really knows that number, it is generally more difficult for a man to talk about than his history of sexual abuse as a child. In discussions with people interested in the class 8 SUV concept, the question of an automatic often comes up, passes, and then, in less than a minute, we are on to some other subject; like basketball.

Suffice to say, it is not an issue that many men are willing to talk openly about. For many years into the future, it will be assumed in our culture that a man can drive anything. So, yes, if you have never driven a manual transmission, it will be a little jerky at first, but with a competent and emotionally generous instructor, you will become comfortable in a very short time. With the shifting and clutch mastered, it should take about 1000 miles of interstate driving to get comfortable with this new SUV and then a few hours of city traffic. You should then be ready to try narrower mountain roads, Western passes and mountain engine braking.

Tune the radio to WWVA (Wheeling, WV) and take a trip by yourself to Opryland (Nashville, TN). For practice, try to sing along on the radio with a couple of lug nuts in your mouth and absorb some of the romantic lore that goes along with your new "Large Car" and when you get back, no one will ever know you have ever driven anything else.

Q. What is your vision for the future of this vehicle?

A. Looking ahead I see some sort of toy box Trailer with an accommodation in the front and rails for motorcars in the back. In the long vision I would like that trailer to evolve into some flavor of Private Varnish; the business cars of the past. A conveyance to get a gang car and six people to a distant set on and back to work on Monday. Wake me when we get there....

Q. How will maintaining such a truck be different from a small one?

A. Not much different. The biggest, and by some measure the most significant one, is the oil change interval and related capacity. The interval will be stated as 30,000 to 50,000 miles; more in some cases. Ignore this. It is a potential trap, forget the miles and change the oil once a year.

You absolutely must ignore the oil mileage claims in in your non-commercial use. With 44 quarts of oil you will never wear the oil out before the oil 'times out'. Because of acid, oxidation and weakening of additives, oil's detergent is essentially dead 12 months after the can is opened weather it went into an engine or not. It will be black in these engines but just barely. The consumption, assuming rings and bearings once at 400,000 or so (\$1100 job), will probably be so low that you will never add any between changes. This is partly due to the average oil temp being far below the design level. Aside from the mechanical clearances twixt the rings and the cylinder walls, oil consumption is a function of its temperature and related viscosity.

Just as with a smaller truck, you watch carefully for signs that there are problems. The rule is the same: all small problems, if ignored, will become big problems. Just consider the gravity of this statement with regard to the size, weight and the truck's original cost and pay attention. The engine is worth much more now than when the truck was new. Be sure you get a good one and then take good care of it. Remember, the oil can only be checked accurately once a day. Develop the habit of doing that first! Every day! While you're there, check for leakage of any fluids anywhere; keeping the engine clean externally helps greatly with this. Check the fan. It should move freely when the truck is cold. It will have a clutch to engage it when it is needed, which will be very seldom once you are moving. Look at the serpentine belt. It is under extremely high tension and a small stone that might get between the shiv and the belt can punch right through the

belt, weakening it by half or more. Check the coolant. If there is any doubt about what you are seeing in the sight glass, take off the cap and check visually. Again, this will be the only time of the day such a check is practical (ouch) and accurate. Take time to do this! Lastly, form a picture in your mind of what everything should look and smell like on each side of the engine, truck and trailer.

Next, switch on the lights and turn signals and walk around the rig. I cannot quickly distill 50 years of experience to tell you all the things that you may hear, see or smell that should wave tiny red or yellow flags, but understand, your truck will speak to you; take pains to be attentive.

If it's broken / needs attention, you are at the beginning of the day and at the best location to hear see or smell it easily and you and the truck are cool enough to deal with the problem. Part of being a professional is the discipline to perform this drill religiously. The walk around is critical. So many little problems can out themselves to you in this exercise. This is a behaviour you must learn to emulate. Let constant suspicion and the 'gift of fear' (sometimes referred to as the little voices from your life experience that keep you safe) be your guide.

Q. I see the displacement of this motor though it looks huge is not much more than the Cummins in the Dodge pickup. What gives here?

A. At 12 to 16 Liters, the engine displacement in a class eight truck is considerably more than a class three Dodge/ Cummins (7.3L). However, most of its bulk is related to it is ability, on one hand, to operate at 30-psi boost (not 5) and on the other to maintain that pressure continuously. The smaller Cummins would have an extremely short life at that pressure, perhaps suffering a dynamic disassembly on the first hill. Unlike a Corvette, the engine and its radiator need to be sized to handle the maximum output of the engine continuously rather than intermittently.

Your class 8 tractor will have a 4" or 5" radiator core that is 5 feet high and 3 feet wide with an inter-cooler in front of it, the transmission cooler in front of that and the Air Conditioning grille denser in front of that; a substantial package... a little like a locomotive!

Please feel free to write if you have any other questions, you are hearing strange voices as you walk around your truck or you just have questions about this concept. I can help. If there is hot stuff dripping from under the truck, call me, my partner is a retired psychotherapist.

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