The Vision:

Let's Build A (Profitable) National High Speed Rail System!

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October 30, 2008

Have you driven recently on an interstate highway that connects two major cities? Ever notice how many large, freight-hauling trucks are out there driving up and down those roads? Each truck is constantly wearing down eighteen large tires, wearing down the highway, and wearing down the driver. And let's not forget the fuel consumption at a time when gasoline and diesel fuel are becoming much more expensive. Isn't there a better way to haul our freight from city to city?

Try this on for size. Consider a national high speed rail system designed specifically for truckers. Don't even think about our existing railroad system. Our existing rail network is like a web of 2-lane country roads. The new system would be more like a streamlined, fast-access, high speed interstate highway system. The best way to describe it is to see it through the eyes of three truckers. Let's call them Joe, Mike and Don.

Joe and Don both drive for the same company. Mike owns his own rig. Today, Joe and Don are convoying from Dallas to Chicago. They pick up their loads at the company freight terminal about an hour before closing time and drive down to the rail dock. The rail dock is located close to the interstate highway and the local major freight highways. It's quick and easy to get there for most of the local freight haulers. Don follows Joe to the Interstate exit for the rail dock. The dock area is a sprawling terminal, capable of handling several hundred trucks per hour.

The Interstate exit dumps the truckers directly into the dock yard. They drive down the main feeder road, looking for an available dock. Branching out to either side are the dockways to the individual docks. At each intersection of a dockway with the main feeder road is a traffic signal. A green light means there is an empty rail-car waiting for a truck. A yellow light means there is a rail-car being moved into position, but it is not yet ready. A red light tells the truckers that a truck has already entered this dockway and it has not yet been moved away from the dock.

Naturally, Joe and Don are looking for a green light if they can find one. When they entered the dock area they passed a computerized display that told them that there were currently 56 green lights, 20 red ones and 24 yellow ones. If there had been few green lights, they might have considered taking a yellow dockway, but on this trip, they know that the greens are plentiful. Joe is savvy. He knows that driving the length of the feeder road takes time. It's quicker to turn into a dockway as soon he arrives at the first green one. As soon as he angles off the feeder road, the light on his chosen dockway changes from green to red.

Don, on the other hand, was on the phone talking to his wife. So he ended up driving a ways further down the feeder before he realized that he should go ahead and turn off into a dockway. After kissing his wife goodbye over the phone, he picked a green light and turned in.

The dockway intersects the feeder road at an angle, like an interstate highway on-ramp. Consequently, Joe doesn't have to slow down much to enter the dockway. But he knows he needs to throttle down, since the dockway approaches the dock with a slight downhill slope.

Joe knows that he has to carefully match his speed to the steadily reducing speed limit signs if he doesn't want to end up on the rails. He gets his speed down to a crawl just as he rolls onto the docking ramp. As the green light promised, there is his rail-car snuggled into the slip. He drives his rig directly onto the rail-car, edging it forward

until the signal light at the far end of the car turns red.

As he coaxes his rig to a full stop, the automatic latching system engages his axles. The only requirement for his truck to be able to be carried by a train was that he had to have the axles fitted with the latching components. Nevertheless, just for good measure, Joe sets his brakes. He gathers his overnight bag and hops down out of the cab.

The rail-car is enclosed along both sides and overhead, so that driving onto it is like driving into a garage bay. It is open on both ends. When it is coupled to another rail-car, a ramp extends between the two, so that one can walk from rail-car to rail-car. Likewise, flexible panels extend from the sides and the roof, so that a train of coupled rail-cars is like one long tunnel. This lowers wind resistance and protects from inclement weather. But Joe's rail-car has not yet been coupled, so each end of this little rolling garage is still open to the weather.

Joe walks over to the rail-car's control panel and reads the display: "Insert card", it says. He pulls out a credit card and inserts it. The display then shows him a menu of destinations and asks him to select one. He selects Chicago. The display then says "Please remove card." Joe pockets his credit card and takes a seat on the bench next to the control panel. He is already seated before the voice recording finishes saying, "Please take a seat and fasten your seat belt.

Within a few seconds of his taking his credit card, the car starts moving away from the dock, gradually accelerating. Joe's rail-car gets switched onto the main switching line that leads to the train make-up tracks, where the outgoing trains are assembled. A car is moving about 200 feet ahead of him and another about 300 feet behind, rolling along the switching line at precisely the same speed as Joe's own rail-car. While in the switch yard, each rail-car is propelled by its own electric motor. Each rail-car is controlled by the yard's central computer system.

While Joe is on his phone notifying his receiving clerk in Chicago of his routing number, his rail-car switches off to the side, onto one of the train make-up tracks. The car gradually slows down, until it eases to a stop just as the coupling to the next car closes, with a slight clinking sound. Joe unbuckles and heads forward along the walkway that automatically extends to connect the rail-cars. Meanwhile, another rail-car is coupling onto his. Joe walks from rail-car to rail-car, passing along the sides of parked trucks and a driver here and there. He arrives at the passenger coaches at the head of the train. This is where he will spend his time during the trip to Chicago.

Joe likes to book the overnight runs so he can sleep during the trips. He walks forward to the sleeper car and identifies himself to the car's steward. He is shown to his compartment. There he waits for Don.

Don joins Joe about five minutes later. His rail-car coupled onto the train several cars further to the rear. Don tossed his overnight bag on the couch and they went back to the dining car. Over dinner Don mused to Joe, "Boy, this sure beats the old days, don't it! And to think this is cheaper than if we drove there ourselves! I feel like I musta died and gone to heaven." They would take in a movie before turning in.

Before they could order dinner, the train was already pulling out onto the main line. This was not your average podunk railroad. The main line consisted of four separate tracks, not counting sidings. The inside tracks are speed controlled. All the trains on the inside track travel at the regulated speed of 110 miles per hour. One track is for northbound traffic and the other for southbound. The outside "shuttle" tracks are for the slower, unregulated trains, and for sidelining any express trains in the event of mechanical problems. It is imperative to keep the main inside lines clear, since train follows train in rapid succession.

This is your typical high speed rail line. The route is as straight as possible between major cities. There are no grade crossings. The rail line right of way is fenced and secured by cameras and intrusion alarms. Although most of the locomotives are diesel powered, there is a planned switchover to electric propulsion, since that can be driven directly from the electric power grid and doesn't require the use of fossil fuels. Just your average nuclear,

solar or wind power plant.

Joe knows this route. He has taken it many times before. He knows that his train will be knocked down and remade in Kansas City, in the middle of the night as he sleeps. Everyone on his coach is scheduled all the way through to Chicago, so they don't need to worry about a train change. When the train from KC to Chicago is made up, it will contain his coach and his and Don's rail-cars. Remaking the train will take about a half hour in KC. When he wakes up in the morning, his cell phone will have a text message telling him his truck's new rail-car location along the train.

It's fun to watch a train being broken up and remade. It starts as soon as the train pulls to a stop on one of the make up lines in the dockyard. All of a sudden, the rail-cars start separating and rolling away. Those that are continuing with this same locomotive pull off onto a siding to let the others go by on their way out to the main switching line. Then the continuing cars move back toward the locomotive and recouple themselves, one by one. There is a short wait as new rail-cars are added. Adding rail-cars continues until the maximum train limit is reached or until the departure time arrives. A train leaves on time, no matter how many rail-cars it has.

Mike joined the train to Chicago in Kansas City. He didn't arrive at the train's make-up point by driving to the Kansas City dockyard. Mike picked up his load at Topeka, which doesn't have an express dockyard. Instead, he drove onto his rail-car at the Topeka "slow dock". When he arrived at the slow dock, he had to wait in line. He watched as trucks were being driven onto their rail-cars as fast as the switch engine could move them into place. There were a dozen loading slips at the slow dock. Half of the slips were for west-bound traffic and half for east-bound.

The switch engine making up the next east-bound train would bring in a half-dozen rail-cars at a time, leaving one off at each slip. Then the engine would go back to the first car it dropped off and begin recoupling to the cars, one by one, reforming its little six-car train, but this time with six trucks loaded. The switch engine would ferry these cars to the make-up track, where they were coupled onto the next departing east-bound shuttle train. When the slow dock was really busy or threatening to run late, sometimes a second switch engine would be brought in, so that one engine would deliver six empty rail-cars while the other engine picked them up as soon as they were loaded and ready to be taken to the make-up track. The two switch engines would perform a slow dance, alternating with each other in leaving off and picking up the rail-cars.

Mike made the trip to Kansas City aboard the shuttle train, running on the outside, slow-speed shuttle track. His train made a stop in Lawrence to add more rail-cars, before continuing on to the main Kansas City dock yard. Mike could have driven to the Kansas City dock yard in less time than it took to go by train. But he took the shuttle anyway, because letting the engineer do the driving gave him some time to relax and to catch some sleep in his cab.

Mike slept through the stop in Lawrence, and the fully automated train change in Kansas City. He woke up to his alarm clock the next morning as the sun was coming up, about a hundred and fifty miles from Chicago. That gave him time to go forward to the diner and have some breakfast. That's where Mike met Joe and Don, who had come back from their sleeper car with the same idea. They shared a table together in the diner, swapping stories about their common destination and their previous experiences there.

As the express train neared Chicago, it shot past an occasional local commuter train on the shuttle track. There has been talk about injecting express commuter trains directly onto the high speed track from the suburbs, but the infrastructure for safely doing that isn't in place yet. This is bound to happen, though, since it will open up suburbs out to 80 or 100 miles from the city center, while keeping the commuting time reasonable. When there is money to be made, things eventually get done.

Mike knew a warehouse manager who took his family on an express passenger trip to Boston to visit relatives. He couldn't get over how they have office cars, so that business people can work during their intercity trips. Even though a business trip on the train takes longer than flying, you avoid most of the hassle and wasted time.

The ride is pleasant and uncrowded. And you can rent an office to work in on the way. Mike's friend said he saw one businessman who took his whole office staff on the trip with him.

The train conductor started sounding the alarm a half hour out from the Chicago dock yard. He wanted to be sure all the truckers got plenty of notice. Each driver would have to be with his rig when the train came to a stop. The train would start its automatic break-up almost immediately after stopping. The passenger cars would stay with the engine, but all the truck-carrying rail-cars would uncouple and head for vacant slips.

Once again under the control of the yard computer system, each car would deliver its truck, ready to drive out into Chicago as soon as the rail-car came to rest and the truck's axles were unlatched. Woe be to the driver that didn't make it back to his truck's rail-car before the break-up. Any rail-car without a driver checking in at the control panel gets diverted onto a holding track, with the trucker being charged a penalty fee based on how long he hogs the rail-car. It can also take a while to get the rail-car switched off the siding, since it may be buried in a line of delinquent cars. He also gets charged for the official taxi service, which is the only way "civilians" are allowed to move around the dock yard. Let's face it--once a driver has been separated from his truck in the dock yard, he is definitely a "civilian".

And so our well-rested truckers advance with their loads out into the great city of Chicago. They will have the whole day to drop off and pick up, and to conduct any other business that time permits. As the sun begins to approach the evening horizon, they will be back aboard rail-cars, heading south in the general direction of Kansas City, Topeka and Dallas. A long haul trucker's job just ain't what it used to be!

The National High Speed Rail System described in this story could be built today. It uses existing technology. It would do for railroads what the interstate highway system did for highway travel. The economic efficiencies gained from the system's ability to move freight hauling trucks from place to place across the country would entirely justify the cost of building it. Nevertheless, the folks at Amtrak and other passenger carriers would probably be extremely delighted with it, because it would give them a reliable, high-speed, nation-wide rail network upon which to operate. No longer would their trains be diverted onto sidings to let higher priority freight trains pass. No longer would their speed be limited over long stretches of slipshod trackage. With such a national express system, passenger rail service could be expected to increase tremendously, the ticket expense falling along with travel times.

The nation is struggling with steadily rising fuel costs. When more and more of our money is being sent overseas to import the "black gold", it makes sense to find ways of operating our commerce systems in more efficient ways. A National High Speed Rail System like the one described here could significantly reduce fossil fuel consumption in this country. Furthermore, it could be converted to use electric locomotives that receive their power directly from the national electric power grid. Such a railroad could be powered using solar, wind, and nuclear power generation, potentially eliminating its use of fossil fuels and making a major contribution in the fight against global warming.

The National High Speed Rail System could not only do all these things, but also could be highly profitable for the companies that operate it. Let's build it!