

THE RAILROADS AND THE ENERGY CRISIS

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The energy crisis to the railroads is like a Get Well Card from an undertaker. We have mixed feelings about it.

There are opportunities with troubles. And also troubles with the opportunity.

And I would like to talk about them from the railway viewpoint.

I will cover consumption, conservation, costs and supply of energy to the railroads. And then movement of energy by the railroads.

Consumption

The railroads consume over 4 billion barrels of #2 distillate fuel a year. This fuel flows into 27,000 locomotives with 4,000 gallon tanks. This seems like a whopping lot of Btu's. But consider...

In using this fuel the railroads move over 870 billion ton-miles yearly. This is 37 percent of the intercity freight, and 3% of the total amount of the energy consumed by the country. A whiskey shot glass holds an ounce of liquid. An ounce of diesel fuel in that shot glass put into a locomotive will move 1 ton 1 mile!

Railroads -- the wheel on steel -- is in fact more economical in fuel than any form of transportation. Railroads move 8 percent more traffic and use only 4 percent more fuel than barges. (1, 2)

The unit train is even more energy efficient than pipelines as well as barges. The energy intensiveness in fact of the unit train -- 2.38 gallons per thousand ton miles compared to 2.61 gallons for inland waterway for freight movement and 4.33 for oil pipeline.

As a result of thrifty train use of fuel, railroad operating costs for fuel are less than that of the competition. Railroad fuel costs now average 10 percent of operating costs with trucks at 20 percent and higher and with barges up to 35 percent.

Conservation

It is becoming more apparent that even with the railroads' well known fuel thriftiness, there is a conservation contest going on with competing modes. It may well rage into the future.

Therefore railroads have been concentrating on fuel savings from the Operational, Mechanical, and Research & Test viewpoint. And we have also been emphasizing recycling.

Operational savings have developed from improved inventory, security, reduced spillage and adjustment in storage locations. Locomotives are being shut down during layovers, the "low idle" option is being installed in new locomotives and idling is being cut by oil fired or electrical plug-in heaters. Fuel consumption calculators, computer simulators, and speed reductions are also paying off in less consumption.

Lightweight Trailer on Flat Car (TOFC) cars, the "Road-Railer" and the double-decker Container on Flat Car (COFC) car are fuel savers under adoption, or test.

In the Mechanical area, low-friction roller bearings seals, reprocessing of used oil, use of additives and improved injectors on locomotives have all been used to save fuel and improve operations.

Some solar power is in use providing Btu's for signal circuits and microwave repeaters.

Research and Test work is going on in fly-wheel energy storage and the retrieval of the energy dissipated in slowing freight cars moving down humps in classification yards.

As to alternate fuels there has been some experimentation with Methanol and the Canadian National has been running diesel engines on crude oil refined from tar sand.

Some work has been done on aerodynamic drag. And for the long pull the Department of Energy appears to be interested in hydrogen locomotive fuel.

Energy savings are also accomplished by recycling. Ties have been shredded to wood chips for boiler fuel. And some are reused in branch lines and sidings. Paper is sold, and metals are reused or sold for reclamation.

It is our feeling that much additional conservation benefits of a secondary or tertiary nature are being reaped but go unheralded, by railroad suppliers. Tallied they would help to more fully enhance the railroad industry status in the eyes of the energy conscious public and also assist railroad management in its stress on energy conservation. The "two-wear wheel" is a good example.

Cost

As has everyone else, the railroads have endured skyrocketing fuel prices. Since 1 October 1978 when we had our last general rate increase that included fuel, we lost over \$200 million.

We now have to jump over two administrative hurdles: COWPS (Council on Wage and Price Stability) and the ICC (Interstate Commerce Commission). And the time lag in obtaining pass through of the cost of fuel is increasingly costly. Today's highest price is tomorrow's average. And we never recoup our losses.

Our average price a gallon now is about 62¢. The main problem with prices is that we do not recoup the losses that occur because of regulatory lags in approval of them. But we are working on it.

The ICC has set up an automatic increase procedure for pass through of the truckers' rocketing fuel costs. Perhaps because the railroads don't have the ability to circle the White House, railroads are confronted with procedural delays and have to chug through a heavy sludge of paperwork before price increases are considered.

However, the ICC has recognized the railroads' plight and has approved a 10 day pass through procedure. We are hoping for 4 days. Given the abysmal rate of return of the railroads (1.26 percent last year) and the soaring fuel prices, the fairest way would be approval of prospective price increases. But that, given past history, is no doubt expecting too much.

There is no justification for the glaring preferential treatment accorded the trucking industry. In its June 29, 1979 order, the Commission attempted to excuse its discriminatory actions by alluding to the trucker owner-operator emergency. However, the almost instantaneous fuel cost pass throughs the ICC permitted applied to the entire motor carrier industry, not just to the owner-operators. The ICC also referred to the "nationwide impact" of a railroad rate increase as a reason for its reluctance to provide a quicker price increase pass through. The purported distinction escapes us. The trucking rate increases imposed an identical impact on shippers. These increases are nationwide as well.

The ICC's action cannot be rationalized. An emergency exists for both railroads and trucks and the same relief should be accorded both. Indeed, the railroads, with their limited resources, are probably less able to bear the harsh impact of these runaway fuel prices.

Supply

While higher prices are irksome, they do not rival the concern railroads have for diminishing supply. We are depleting inventories, buying on the exorbitant spot market, juggling and shifting supplies in tank cars, obtaining some small relief from States' emergency set-asides, and sadly curtailing service. But railroads can go only so far with inventories and ingenuity. At the moment the most serious curtailment for lack of fuel is the embargo of traffic between St. Louis and Kansas City, by the Rock Island Railroad.

While the Administration has said it deplors rationing, and the word is taboo, that is what is happening. The "build up" of the Defense Petroleum "Reserve" is a ration. The 240 million barrel "set-aside" of middle distillate for home heating by October's end is a ration. The ERA (Economic Regulatory Administration) ordered the increase in gasoline production by the refineries, which reduced the middle distillates -- such reduction was another form of rationing. ERA direction of an "allocation" of reduced levels of middle distillate to users by oil companies is a ration. And so was the infamous Rule 9.

The Administration through the DOE's (Department of Energy) ERA did ration middle distillates to: agriculture, oil and natural gas producers; mass transit and truckers hauling agricultural products.

The available fuel supply got less, while the railroad traffic increased and a large part of that increase was in the movement of energy and in support of agriculture.

Hence the irony -- the most fuel efficient form of transport penalized by Federal Government bias in favor of less fuel efficient users. In the name of saving fuel, more fuel is being used!

Movement

The railroads are big in the energy movement business. With a fleet of 359,000 coal hopper cars having a replacement value of \$14 billion, railroads move about 70 percent of the nation's coal. With an additional 12,000 cars on order reflecting an investment of \$480 million we can keep up with the nation's needs.

In addition to coal we move practically all the spent nuclear fuel, and much of the nuclear waste and rocket fuel. The railroads transport about 475,000 carloads of petroleum products yearly. 25 percent of this is liquid petroleum gas. 20 percent is residual fuel oil. It's perhaps wise to recall that 35 years ago the railroads moved a million barrels a day of fuel from the Southwest to the East Coast, and Mobil Oil has now rediscovered the tank train that moves fuel from New York to New England cheaper than by barge.

Coal hauling has not increased as expected, mainly due to a number of uncertainties about environmental rulings by the EPA, the high cost of scrubbers, the unpredictability of nuclear power plant development, the use of natural gas vs. oil and coal, and an apparent general reluctance to change. Rail rates have been cited as reluctance contributors.

However, there is more emotional bias about coal rates than fact. The fact is the delivered price of coal in a decade has risen from over \$7.50 per ton to almost \$29 a ton, a 400 percent increase. But the average rail rate for coal rose less than 145 percent.

Nationwide rail coal rates average 1.51 cents a ton mile, whereas all commodities as a whole average 2.36 a ton mile. Contradictory as it may seem while more coal may be mined, less will be transported over

long distances. The traffic demand for coal movements may not be as large as many anticipated because the coal movement market was recently shrunk by Federal edict.

The Environmental Protection Agency without saying it virtually ruled that twenty-nine million tons a year of Western coal will not move to the East. The ERA reversed a former ruling that had permitted low-sulphur coal to burn without scrubbing.

Now since all coal must be scrubbed for sulphur dioxide, there is no advantage for users in shipping low sulphur coal to cities in the East or Midwest that virtually sit on high sulphur mines. Either way they've got to scrub.

Furthermore there is no question that the railroads can move all the coal traffic that can conceivably be produced. Coal is the railroads' staple. Every fourth ton the railroads move is coal. And they can get cars and locomotives and lay new track far faster than new mines can open.

The Bureau of Mines (3), a combined study for the former Federal Energy Administration, the Department of Commerce and the Department of Transportation (4), a separate special task force of the Department of Transportation (5), and the Congressional Office of Technology Assessment (6); all four agreed that the railroads could handle the increased coal traffic. After all in the unlikely event that coal traffic is doubled over ten years, it would mean only a 20 percent increase in railroad traffic. In two recent years (1972-3) rail traffic went up 15 percent. The railroads exerted little extra muscle to meet this surge. It can certainly do in ten years what it can almost do in two.

Thus, it is readily apparent there is a rescue option to being ravaged by OPEC. The way of redress is the railway.

Promise!

The dual shadows of energy shortage of inflation threaten to blot us out. It would be utterly rash to pretend to offer a magic way to totally off-set this dire event. There is probably no single way. But one of the ways to prevent eclipse by these twin terrors is the railway. The nation's railroads as austere users and mammoth movers of energy at low cost won't wipe out inflation but they can help.

As a sign of conservation sense, for instance, New England Power at Brayton Point, Massachusetts -- a plant that now consumes 15 percent of oil consumption of all the utilities in New England -- will soon begin converting that plant to coal. On completion this will save the nation and New England almost 11 million barrels of oil yearly.

Keep in mind who the railroads are. And who we are not. We are not a monolithic monopoly. Among other obstacles railroads are presently struggling with regulatory structures and strictures that should fall to a de-regulation design based on a Railroad Bill of Rights.

In sum the railroads pay a social dividend, relieving highways of congestion noise and high risk and above all in saving energy.

The railroads consume a piddling amount of energy for a powerful lot of work. They conserve energy both in its use and in their use by others. They pay a high price for energy, but not as high a price as a barge or truck, since the railroads consume less in moving more.

References.

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