W.W. HAY RAILROAD ENGINEERING SEMINAR

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Dedication

For my teacher, mentor and extraordinary good friend, the late Dr. Edwin P. “Pete” Patton, of the University of Tennessee.

Who Shot the Freight Train?

- It is a phenomenon that is not technological in nature and must be labeled "psychological obsolescence".
- Agonizing fact is that few minds comprehend the (historical) dilemma of the freight railroad industry because of its <u>complexity</u> and its <u>unorthodoxy</u>.

Who Shot the Freight Train?

- The problem has more facets than an armadillo has plates: the answer is education.
- "Any problem must be defined before it can be solved; and because trains stir up so much emotion, they are susceptible to the magnificent myth, if not the big lie."
- *This all suggests that we need to look beyond the "usual suspects", and past the normal scapegoats and "urban myths".*

The Beginning

- 1947: for first time in 20th Century have the three primary components for successful growth of the trucking industry.
- *The 3 P's = peace, prosperity and paved roads.*
- From 1947 to 1960 railroad industry faced a competitive blitzkrieg the likes of which they had never seen before.
- Railroads were totally unprepared and responded like a classic monopoly, think domestic Big 3 automakers (remember the Olds Cutlass?).

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From 1947 to 1960

- Rail market share of ton-miles drops from 65 to 44 per cent.
- Rail market share of tonnage drops from 56 to 36 per cent.
- Rail market share of freight revenues drops in half from 56 to 29 per cent (*revenues not tons pay the bills*).
- **Steepest declines in 20th century.**

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Fifties Phenomenon

- From 1947 to 1960 rail freight annual revenues stay relatively constant, between 8 and 10 million dollars per year.
- Total rail carloads drop by one-third during same period (mainly in 3 groups: livestock, coal and Less-than-CL)
- Carload losses offset by impact of 15 different general rate increases from 1945 to 1958 (probably not the best long-term strategy but worked in short-term).

Fifties Phenomenon

- From 1947 to 1960 trucking industry annual revenues explode, from 5 to almost 20 million dollars per year.
- Private truck fleets took over half the new business; 1935 MCA exemption more popular than anyone imagined.
- First in-depth analysis in 1963 shows private fleets with 138 mile average length of haul and one-third total truck tonnage.

Fifties Phenomenon

- "The enormous growth of commercial private carriage of property by motor vehicle in recent years, resulting as it has in a continuing erosion of huge volumes of traffic that would otherwise be available for transportation by public carriers, is a serious problem for railroads and other common carriers." *Senate Commerce Committee, 1958 hearings.*

Fifties Phenomenon

- After 1980 private trucking <u>still</u> enormously popular in spite of total price deregulation for both truck and rail.
- GDP in fifties grew 41 per cent, reflecting huge pent-up demand for high value consumer goods, new homes and home furnishings, and new motor vehicles.
- Total freight spending increases by 100 per cent from <u>1947 to 1960</u>.

Fifties Phenomenon

- Trucks get the high value, high rated freight (with greatest growth and profits) and railroads keep lower value, lower rated slow growth commodities.
- Would submit you cannot lose the freight market you never had; market is clearly more service than price sensitive.
- Fifties also see the beginning of what we now call supply chain management.

Fifties Phenomenon

- All the new freight moving in truckload quantities rather than boxcar size shipments = major structural (permanent) changes in physical supply chain.
- One indication of this is that intermodal carloadings double from 1957 to 1960, even through a recession (and carloads drop 14%).

Fifties Phenomenon

- And the advent of the comparative or inherent advantage of each mode, which continues for next 50 yrs.
- In spite of external factors rail share continues very strong in large shipment size and longer haul freight.
- And intermodal continues to grow in spite of railroad management attitudes ranging from ambivalence to indifference.
- ***With apologies to Billy Joel, the truckers "didn't start the fire".***

Some Food For Thought

- In **1950** Dr. Charles Taff, Univ. of Maryland, singles out "speed of service" as one of most important advantages of motor carriers and a major reason for their success (and continues to say so in print for next 35 years).
- He accurately defines speed of service as "transit time from platform of the consignor to door of the consignee".

Speed of Service

- Taff noted that speed of service consists of 3 components:
- Transit time between terminals (line haul),
- Time spent in terminals, and
- Pick-up and delivery time.
- *To be truly competitive a carrier MUST perform all 3 equally well.*

- **This remains a major issue in 2009!!!**

Here's Why Trucks Won

- Waiting movement at origin: 16 hours
- Waiting placement at destination: 16 hours
- Time at interchange: 7 hours
- Time at intermediate terminals: 24 hours
- Miscellaneous delays: 5 hours
- Time in trains: 14 hours (*actually moving*)
- Total Time in Railroad Hands: 82 hours.

- *(<u>Hint</u>: you don't need high speed highways to compete with transit times like these from 1956 AREMA analysis of typical freight-car move.)*

An Insider's View - 1956

- "While regulatory restrictions are a major deterrent to railroad progress, a principal cause of traffic diversion in many instances is the reduced transit time and greater punctuality of highway delivery. Too small a proportion of the total volume of railroad freight movement is delivered in accordance with advertised schedules." John W. Barriger III, 1956 (*Super Railroads*).

Doomed by Complexity

- Trucking was growing with the postwar economy; its route and service structure was almost perfectly aligned with the marketplace.
- The railroad route and service structure had been designed and built for a different time and place in history; railroads had the dual problems of getting rid of the old and growing the new.
- Rail network built with 19th century technology and highway network with 20th century technology.

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And Some Mitigating Factors

- Truckers were both learning and creating a new business; basically making it up as they went along.
- Railroaders forced to unlearn old business rules and then learn new ones in the same amount of time.
- Historical reality confirmed the old axiom that education is easier than reeducation.

The DUH Factor

- "We don't know anything about our business, about our customers, about what they need, about what we ought to be selling. Above all we don't know anything about our costs, or how to price our product." D.W. Brosnan, Jr., Southern Railway, 1959.
- As Southern Railway president Brosnan went on to create the absolute finest railroad industry marketing department in its day.

Compare and

- "(railroad management) most closely resembles attitudes observed in some utility companies and government agencies. This attitude has led to behavior that holds tradition in high esteem and acceptance of conventional wisdom well past its usefulness. Herein lies one of the primary causes of the stagnation of railroad management, the inflexibility of thinking and rationalization of failure in a fatalistic acceptance of the situation."   *Railroad Management*, D. Daryl Wyckoff, 1976 (associate professor Harvard University).

Contrast

- "Both the quality of service and the unit costs of highway operations, and thus the competitive status of highway carriage vis-à-vis (rail)….are as much affected by trucker management philosophies and practices as by the physical environment of highway construction and highway equipment." *National Intermodal Network Feasibility Study*, Federal Railroad Administration (Reebie) 1976.

Real Impact of Price Regulation

- Impediment **or** *irritant*?
- Barricade **or** *speed bump*?
- Primary **or** *mitigating factor*?

Basic Causes for Share Loss

1. The greater growth of traffic possessing characteristics for which other modes have a comparative advantage;
2. The loss of traffic to new modes having inherent cost and service advantages for the traffic;
3. The diversion from railroads of traffic for which the rails have an inherent or latent comparative advantage that is thwarted by **regulation** or other impediments.

Task Force on Railroad Productivity, 1973.

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Rail Innovations 1954 to 1979

- "Legalization" of intermodal aka piggyback, by ICC in 1954 at request of New Haven Railroad (20 Questions Case).
- Domestic containerization starts on New York Central in 1956 with the Flexi-Van.
- C&O introduced first RoadRailers in 1958.
- Frisco and Santa Fe help create autorack car for new automobile transport in 1960, after other railroads start moving autorack trailers in intermodal service.

More Rail Innovations

- First unit trains for bulk commodities on B&O in 1963; defeats the coal slurry pipeline.
- Jumbo covered hoppers for grain and ag commodities by Southern Railway 1964 followed by L&N in 1965.
- Rent-a-train agreement on Illinois Central in 1968 (early volume agreement).

More Rail Innovations

- First intermodal unit trains in 1972 with advent of Landbridge container service on Santa Fe.
- First prototype doublestack container car in 1977 thanks in large measure to efforts of Sea-Land.
- BN, CNW and UP open up Wyoming’s Powder River Basin coal fields in the late seventies.

Innovations

- We would submit that progress under regulation was slow but always steady and moving forward (in spite of substantial amount of regulatory fumbling, bumbling and plain old stupidity).
- **Where are similar customer-oriented innovations from deregulated era 1980 to 2002???**
- Lots of new technology (toys?) in the past 25 years but customer focus in a service business seems to be M-I-A (internal vs. external focus).

Deregulation Examples

- Let's examine, in detail, one of the more interesting examples of economic deregulation at work.
- *Piggyback*
- *Trailer-on-Flatcar (TOFC)*
- *Intermodal*

Intermodal Deregulation

- Like the headwaters of the Nile River in an earlier time, the exact origins of intermodal deregulation remain something of mystery.
- In 1980 neither the Motor Carrier Act or the Staggers Act included any specific provisions to deregulate rail intermodal service in whole or part.
- Railroads were strangely quiet here.

Background

- The FRA's 1976 *National Intermodal Network Feasibility Study* had not even mentioned the possibility of deregulation
- Neither had the 1973 *Final Report of the Task Force on Railroad Productivity*.
- Both had made virtually the same recommendation to allow railroads greater freedom to expand regional pick-up and delivery operating authorities.

Intermodal Deregulation

- "the lack of any substantial growth in piggyback service has never been attributed to the fact that it was regulated by the ICC. Rather, it was because of delays in rail transit, expensive piggyback yards, high loss and damages due to rail jostling, and lots of other things...The lack of ICC authority to require joint rates and through routes for intermodal shipments may well be a factor in the trailer-on-flatcar sluggish growth. Thus, if the purpose of the provision is to enhance piggyback operations it may well have the opposite effect." Sen. Fritz Hollings (D-SC) in April <u>1980</u> hearings on Staggers.

Self-Inflicted Wounds

- "Shippers have been burdened with multiple rules and rates for inter-territorial shipments. A prime example concerns the major flow of freight across the Mississippi gateways to the West Coast. Eastern railroads concentrate on Plan 2.5 and no longer offer Plan 4, while the western railroads offer Plan 4 but not Plan 2.5. Some TOFC/COFC personnel state that the lack of through Plan 2 rates was the greatest deterrent to attracting through traffic." *National Intermodal Network Feasibility Study,* FRA, 1976.

More Self-Inflicted Wounds

- Innovative high-speed transcontinental intermodal train service, a 1967 joint NYC-Santa Fe project, was ultimately derailed not by regulators but by rail industry “food fight”.
- In 1967 NYC’s Marketing Department said, “the future lies in breaking out of the commodity business and into the service sensitive merchandise business”, but conventional wisdom and the status quo carried the day.

More Self-Inflicted Wounds

- Santa Fe went ahead with their portion of the new service, calling it "Super C" to reflect the legacy of one of the world's great passenger trains (and equally great railroad).
- In 1989 Conrail and Santa Fe finally implemented the original high-speed transcon service as Q-NYLA on 76-hour schedule.

The Boxcar Syndrome

- "Added to all the regulations was the entrenched bureaucracies of the railroads themselves. Traffic officials who insisted on sticking with the boxcar syndrome were stuck in a marketplace that had long since declared itself bored with that game and switched to another." *Piggyback and Containers, David J. DeBoer.*

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Intermodal Deregulation

- In <u>1981</u> (after 2.5 years of proceedings) it was the ICC that finally deregulated intermodal or trailer-on-flatcar traffic by regulatory edict under authority granted by 4R Act and Staggers, over the very strong objections of both the trucking industry and the Teamsters Union.
- Intermodal deregulation was loosely based on the de-reg of fresh fruits and vegetables, which turned out to be a complete dud.

Reality Check

- While this was an important event, it addressed only the price side of the equation for what was still a service business.
- Railroads were now free to offer a combination of low price and lousy service.
- Would submit that intermodal deregulation became mandatory after trucking industry deregulated in 1980, which begs the question of why ICC did the heavy lifting and not Congress.

Reality Check

- But we would submit that a far more significant development occurred in 1979 when APL created the first domestic nationwide intermodal network, LinerTrain.
- With this development one operating and marketing entity now controlled train and terminal operations as well as equipment and pricing.

Reality Check

- APL had created what we now call an “Intermodal Business Unit” but on a nationwide scale.
- APL went on to implement virtually all of the key recommendations of the FRA’s 1976 Intermodal Network Feasibility Analysis (well in advance of the railroad industry).

More Reality Check

- The combination of a true intermodal network with the unprecedented smooth, damage-free ride of double stack gave shippers something never before available.
- Equally important, for the first time shippers could obtain a through rate between virtually any two points in the network (just like the truckers).

It’s the Service Stupid

- APL also provided shippers with the first truly “seamless” door-to-door intermodal service (since demise of NYC’s Flexi-Van).
- Ex-railroader Don Orris understood what Dr. Taff had started saying in 1950; a carrier must perform all 3 components of “speed of service” equally well to be successful.

Paradigm Shift

- APL followed up with a brilliant marketing and advertising campaign.
- By 1988 APL's own container volume (by itself) was equal to 10 percent of rail industry's 1980 total volume of trailers and containers.
- Program was so successful that by the late 1980's shipments of household goods were returning to the railroads for the first time in 70 years, with a partnership between APL and Allied Van Lines.

Knocking Down Real Barriers

- More importantly APL (and Mr. Orris) became the agent provocateur, just like truckers had been 25 years earlier.
- APL had no massive investments in railcars and intermodal trailers to protect; no status quo or time-honored traditions to protect either.
- Afford to innovate from scratch.

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Another Innovative Approach

- Late 1986 CSX was losing $50 million per year on intermodal business with annual gross revenues of $700 million….we had to make some drastic changes.
- Studies suggested we could grow and improve the profitability of the business by moving it out from under the railroad….but true potential could only be obtained by getting it at arms length from the railroad.
- Putting a railroader in charge did not appear to be in our best interests.

Another Innovative Approach.

- We needed someone who understood that we were competing with trucks, who really understood the economics of the business and could work with the customers and the railroads.
- That led us to Neil Porter, who had strong trucking background and been in charge of Sea-Land operations in Hong Kong.
- Another change he (Porter) made was partnering with third parties, consolidators and their customers, the truckers.

Another Innovative Approach

- Railroaders wouldn’t go near truckers.
- They just weren’t temperamentally suited to work with them.
- Railroaders have always been geared to volume at just about any price and truckers to service, timeliness and low costs and prices.
- Neil knew nothing about a railroad and the railroaders were not thrilled with him, but that did not bother me.

Another Innovative Approach

- They had not been able to make any money in intermodal and we needed someone who could turn that around.
- Neil had a lot of new ideas and put them into effect quickly, effectively and profitably.
- In short order he (Porter) turned the corner to profitability.
- *Chapter 41 of the Autobiography of Hays T. Watkins, former Chairman and CEO of CSX Corporation.*

More Reality Check

- Deregulation did have an indirect impact in an odd sort of way.
- One of the side effects, or unintended consequences, of trucking deregulation was the almost total demise of the unionized carriers (and the IBT).
- As a result, a major institutional barrier to increased use of rail intermodal was removed; removal was a primary reason for the explosive growth of the 1990’s.

More Reality Check

- By 1989 it was estimated that only 4 per cent of US highway traffic moving via rail intermodal service; still less than 10 per cent today.
- Even with total deregulation, 25 years later the potential for domestic intermodal remains largely untapped.
- Two-thirds of current intermodal business consists of international shipments.

FINALLY

- The fact that it was the comprehensive reorganization of the intermodal business, based largely on a document prepared by the FRA 5 years before deregulation, rather than deregulation itself, that ultimately drove profitable intermodal growth showed what a relatively minor factor intermodal deregulation was.

FINALLY

- Deregulation itself was mostly about the freedom to close low volume, unprofitable terminals (1,175 in 1978 to 360 in 1986).
- Final resolution of contract issue probably more important in the long run.
- We would submit that deregulation helped to facilitate change but did not in and of itself produce or create major change.
- ***It took mostly outsiders or customers, rather than the railroads, to unlock the true potential of domestic intermodal, a familiar story.***

Two Big Questions of the Age

- Were railroads still a monopoly ready to exploit their monopoly status to the full extent possible if not restrained; or
- Were railroads victims of an obsolete regulatory regime that would not allow them to compete in the marketplace ?
- **Staggers answered both questions with a resounding YES!**

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Two Big Answers

- After Staggers railroads did respond more aggressively to some competitive situations with reduced pricing; both rail and truck proved equally adept at using new contracting authority.
- Rails also ruthlessly exploited their monopoly situation by aggressively raising rates on captive shippers; 2004 GAO Analysis found 31% of rail tonnage moved on rates > 180% RVC (regulatory limit).

Conclusion

- Rail deregulation was a non-event for many existing or potential customers; trucking de-reg was far more traumatic.
- For so-called captive shippers (one-third of all rail carload customers) deregulation proved to be a negative, reflected in a bizarre 25 year struggle to reverse key portions of process.
- Difficult to find another industry “at war” with its customer base for so long (except maybe commercial airlines).

Conclusion

- The rail industry continued to demonstrate its remarkable propensity for shooting itself in the foot (events of 1995 to 2001).
- In the end deregulation in general, and the Staggers Act in particular, made the dining room look much nicer with new china, fresh linen and flowers on the table, but did very little to actually put food on the table or freight back on the rails.

QUESTIONS

Thank you and hoped you learned something new today.