

## THE CONCEPT OF INTERMODALISM: CAN IT HELP US TO UNDERSTAND THE ROLE OF INTERCITY RAIL IN THE UNITED STATES?

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Thank you, Mr. Chairman, and good afternoon.

In this TRB Conference we are examining alternative ways to look at the set of challenges presently facing Amtrak. This morning Tom Downs described to us the history of the development of Amtrak as a private, profit-making corporation. For the past few hours we have been challenged with a variety of perspectives, incorporating concepts as varied as the British experience with privatization to the American experience of revitalizing town centers. I have been asked by your committee to phrase this question in terms of the concept of Intermodalism, which I will try to do over the next 15 minutes.

Let me say at the outset that the last thing our profession needs is a new set of buzzwords which offer, or imply to offer quick fixes to long-standing policy issues. The term Intermodalism, as we will use it here, refers to a management philosophy which has taken decades to develop and mature, largely driven by American leaders in the freight transportation sector, and rarely applied effectively in the public sector. The full application of its principles to the public sector will probably also take decades to apply and refine. But a review of those principles at this time is appropriate, and may provide food for thought.

### HORIZONTAL INTEGRATION AND THE LOGIC OF INTERMODALISM

We have produced some basic graphics, (reproduced in this circular as FIGURES 1 and 2) to illustrate some basic principles of Intermodalism. The graphic symbols in FIGURE 1 portray the elements of a large intermodal company, such as American President Lines, or SeaLand/CSX. In FIGURE 1, these trip segments have been organized in terms of mode. We see that, within a large intermodal company, there is indeed a management unit whose job is to efficiently manage the trucks that feed the ship, to efficiently manage the ships, to efficiently manage the rail services, and to efficiently manage the distribution services at the end of the trip. Looking at FIGURE 1, we see the logic of labeling this form of organization as one of vertical integration. Within this concept, the managers of (say) the ships know how to optimize the efficiency of that fleet of ships, and make decisions on that basis. Within this logic, the

manager of a given mode would be evaluated in terms of the efficiency of that mode, of that operation. Examples of such measures of performance might be cost per mile, revenue per mile, etc.

In FIGURE 2, the very same set of trip segments is seen through a different lens. In this vision, the success or failure of the operation ( i.e., the measure of its performance) is observed in terms of its impact on the end user/customer. Examples of such measures might include door to door travel time, door to door travel cost, and reliability experienced by the consumer. It is important for this discussion to note that the actual measures of performance utilized in FIGURE 2 could be different from and totally inconsistent with, the measures used in FIGURE 1. Looking at the obvious example of the overnight freight industry, a concept in which a package from Boston to New York is routed through Memphis may look very bad through the lens of modal performance, while looking very good in terms of the total systems performance experienced by the customer. (Ref. 1)

Creating graphics to illustrate this concept is easy: explaining the scale of impact this management change has had on major portions of the transportation industry is difficult to do in the time available. Clearly, without this change toward the evaluation of operations from the point of the view system-wide needs of the end user, the overnight freight industry would not exist today as we know it. The shift in management orientation, (or if you must, the shift in paradigm) has profoundly changed the way in which decisions are made and organizations are structured. It is worthwhile to examine the implications of such a shift for the manner in which we observe and evaluate our national rail system.

Earlier in the conference, Tom Downs explained that Amtrak is being evaluated in terms of a free standing entity, which for good reason or bad, was defined as a profit making corporation. In our metaphor, Amtrak is being observed and evaluated in terms of vertical integration, and not in terms of horizontal integration. But there are other models of evaluation appropriate to national rail systems, to which we now turn.

### EUROPEAN APPLICATIONS OF HORIZONTAL INTEGRATION

The creation of a package of services which provide superior services to the customer, and need to be evaluated in terms of

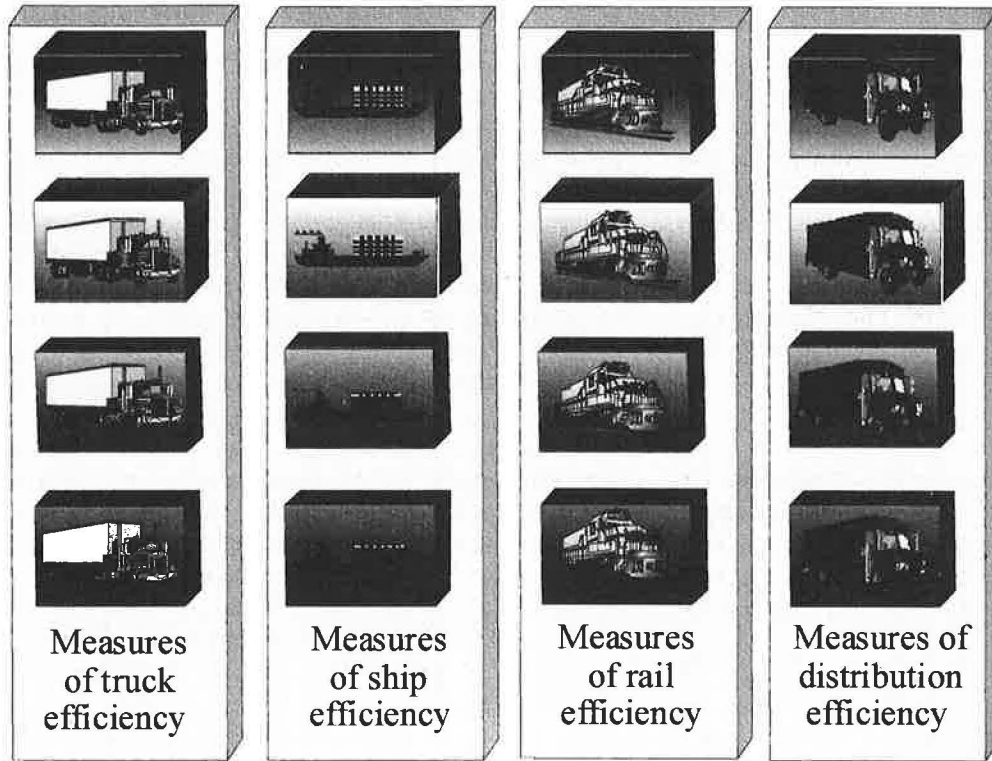


FIGURE 1

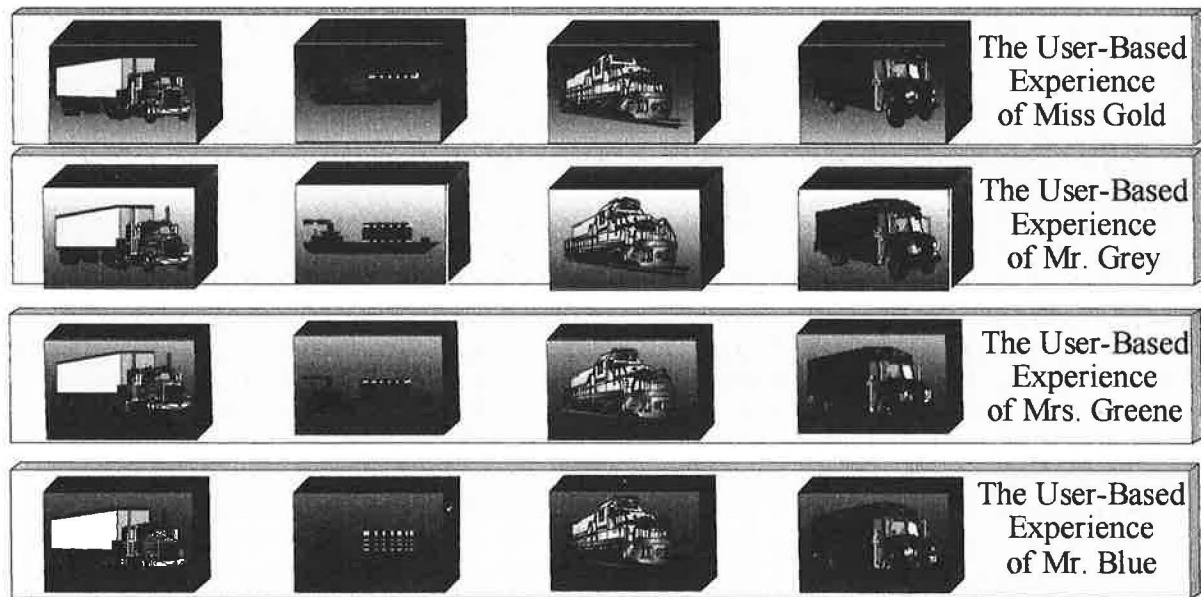


FIGURE 2

that customer-based experience, is not new to students of public policy toward transportation. We can observe examples of such investment in France, Germany and Switzerland. The new high speed rail station at the Charles DeGaulle Airport in Paris represents the investment of massive amounts of capital to build a station literally within the Terminal Two airside complex, tunneling under active runways. With the creation of an entirely new rail line, bypassing the city of Paris on a north south axis, new high speed rail services are being designed and implemented which will provide two hour travel times to major cities in the western portion of Europe. Similarly, the existing rail complex within the Frankfurt Airport is currently being doubled in capacity as part of project which will lower the travel time from that airport to Cologne from two hours to one hour. The Swiss government has been for some time emphasizing the efficiency of its airport rail links in its tourist information, with both through ticketing and baggage handling offered across modes. (Ref. 2)

Each of these investments may have looked poorly in terms of standard modal measures of performance, (such as cost per new rail rider, for example) but each may have a profound effect on larger national goals and strategies, including the impact on the national aviation industry. For a trip to Asia, or a trip to North America, there is considerable territory in which the Frankfurt Airport and Paris/DeGaulle Airport are direct competitors. Each nation is building high speed rail links that extend the logical market shed for their national long distance airport. To the north, competition between airports in Paris, Amsterdam and Brussels will be intense. The French investment in a rail system that can take citizens of Belgium to the basement of the airport's Terminal Two in just over an hour's time may have a profound effect on the marketability of French long distance air services in this market. (Ref. 3)

In each of these cases, the national investment in the rail system was undertaken to accomplish a performance objective above and beyond that experienced by the rail operator alone. In fact, these strategies represent highly specific attempts to create intermodal services for the customer. In a series of interviews with German transportation officials, this author was told that the decision to focus intermodal rail investment at Frankfurt, and not at other airports, was a function of Frankfurt's competitive position for long distance air travel. French officials reported the same rationale for connecting high speed rail to DeGaulle and not to Orly Airport. In each of these cases, the decisions for investment in rail were made in terms of larger strategic policies of the national government.

The creation of a package of services to influence the behavior of the consumer, with strategies that cut across modal boundaries, is a good example of the European application of the principle of horizontal integration.

## INTERMODALISM AND THE SURVIVAL OF AMTRAK

It could be argued that a better national understanding of Intermodalism may be a key to the success of funding Amtrak, for it is not as a free standing element that Amtrak contributes to America's mobility and its economic growth. It makes its contribution as part and parcel of a national system of transportation, which is made up of a combination of public and private roles. Intermodalism, the study of the interaction between modes within a total system, impacts the policy debate in two ways. First, some of the benefits from investment in Amtrak accrue to other modes within the national intermodal network. Second, Amtrak services must be seen as a part of a larger, national intermodal network which provides mobility to Americans.

Concerning the effect of Amtrak investments on the performance of other modes, the Coalition of Northeastern Governors Task Force on High Speed Rail (CONEG) research was highly instructive. Our major conclusion had to do with the role of improved rail service as part of a total system: we were able to show tangible, physical implications of high speed rail service on other portions of the system, particularly at chronically plagued slotted urban airports. Thus, some of the benefits of high speed rail were experienced by those on board the new train, and some of the benefits were experienced by those with improved efficiency at Logan or LaGuardia airports. (Ref. 4)

The benefits which are generated by our nations rail system sometimes can be explained in narrow, modal terms, (such as cost per rider, or revenue per route mile) and sometimes cannot. The CONEG research demonstrated how an investment in rail between Boston and New York could have significant, measurable impact on the quality of air travel at LaGuardia and Logan. A precious slot freed up by a short haul Boston-New York plane could be used by a Boston to Los Angeles plane. A slot freed up by a new Detroit-Chicago rail investment, could be utilized for more service to Tokyo. In short, some of the benefits which were generated by the rail investment did not end up visibly on the ledger sheet of the rail company, but rather were experienced throughout the tightly interconnected transportation system.

The choice of user-based measures of performance calls upon us to measure the time saved by the air passenger who is not circling needlessly over the City of Boston. And similarly, the choice of user-based measures of performance calls upon us to look at the improvement in mobility of the regional bus rider gaining a higher quality transfer at the new rail terminal in Meridian, Mississippi.

## INTERMODALISM AND GEOGRAPHIC COVERAGE

Amtrak, we contend, should be evaluated for its effectiveness as part of a total national system which embraces all modes. Trips from small town America very often start on regional bus companies, whose coverage is so wide that Amtrak would neither want nor be able to mimic them. In one view, it could be argued that the state of New Hampshire is not served by Amtrak; in a more systematic view, it can be observed that most of the state is served by high quality, private bus service connecting into the national system at Boston's South Station Intermodal Transportation Center, from which an escalator takes the rider to the Amtrak rail platform.

We know empirically that a network built upon the trunk of Amtrak services, and feeding the nation's airports, does exist as a major national resource, but analytically, we do not know much about it. Initially, federal legislation mandated that the states document the characteristics of these systems as part of their Intermodal Management System, a concept somewhat downplayed in more recent legislation. Taken together, the combination of bus routes which interconnect with longer distance services represents a great national resource. Clarifying the existence of these interconnecting services could lead to the development of a system in which information (and later, through-ticketing) could be provided, in a manner similar to California's intermodal bus/rail network created several decades ago.

The National Highway System (NHS) can be seen as a precursor here. The NHS was designed by FHWA under the explicit direction of Congress to create a national network that ties points of intermodal transfer together, in this case with highway investment. The will of Congress to create a national system that connected the various modes was clear, with carefully detailed standards for inclusion in the system. Where roadway connections to major points of intermodal transfer are poor, inclusion on the NHS system allows for increased flexibility in highway financing sources.

## WHAT WE CAN DO AND WHAT WE CANNOT DO

Clearly, a massive expansion of Amtrak's coverage is not a feasible option at this juncture; nor are major investments to the capital plant to accomplish better intermodal connections. There are essentially two policy options available to us: the continued focus on the creation of good intermodal terminal connections, and the creation of an intermodal information system to support those connecting services. At this time, it is not only essential that we press forward with concept of a national program of interconnected services, (massively expanding the influence area of the Amtrak trunk route system) but that we also create documentation to show

Congress that the national system exists, and is being tied together. On the physical level this implies continued work in tying services together. At a virtual level this means the creation of information systems which can provide the end user with information needed to plan the total trip on the intermodal system, with seamless access to trip planning information across modes. (Ref. 5)

We have a national program to bring Intelligent Transportation Systems to the citizens of the country. Have we done enough to integrate the systems of information about rail with the information systems of other modes? The citizen of New Hampshire has good quick access to Amtrak from dozens of New Hampshire towns, thanks to the development of the South Station Intermodal Center. To make a unified trip from North Conway, New Hampshire to Penn Station, New York is easy and pleasant. To get information about that unified trip is nearly impossible. The creation of an information system specifically aimed at the traveler seeking to take advantage of the nation's intermodal system should be a priority.

## THE RELEVANCE OF INTERMODALISM TO AMTRAK'S FUTURE

At this juncture in Amtrak's development, (and indeed in terms of its survival) the message needs to be sent about its role in a system providing mobility to geographic areas far wider than the cities and towns directly served by Amtrak. As a provider of mobility for longer distance trip segments, it is not a corporation seeking just to maximize profit, any more than the local elementary school is such a corporation. But, in order for those in Congress to better understand the richness inherent in this national system, we in the transportation profession have to do a better job documenting the existence of the full network, and demonstrating tangible steps of improving the nation's access to it.

Amtrak can be explained for what it is, a set of trunk services, which when combined with a much larger set of collector and distributor services provides a national system of mobility for millions of Americans. There exists a rich and full experience base of transportation professionals, mainly based in the intermodal freight industry, who have made the transition away from narrow modal orientations, to a viewpoint utilizing a set of user-based measure of system wide performance. This experience base can be applied to the issue of understanding the critical role of Amtrak in the American intermodal network. The critical need now is to support Amtrak and the DOT in the development of tools and mechanisms which can help to bring this about. As Secretary Slater assembles around him a group of key staff with an enthusiastic, demonstrated commitment to Intermodalism,

the question turns to, "How can we help to bring about this vision?"

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