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# INTERMODAL TRANSPORT OF PERISHABLE PRODUCTS

*Editor's note: The 1985 TRB Annual Meeting featured a session, entitled "Perishables Via Intermodal Transportation," sponsored by the Committee on Intermodal Freight Transportation in which four panelists discussed their experiences in the movement of fresh fruits and vegetables by piggyback. Presented below is a summary of the panel discussion.*

Carriage of perishables by trailer on flatcar (TOFC) has grown from a trickle to a large volume in the last 5 years. Special service companies that have developed marketing and service packages have worked with railroads to develop the transport of perishables by piggyback. Two of the panelists represented major marketers that have led the way (Intermodal Express, Inc., and National Piggyback Services, Inc.) and two panelists were from railroads (Santa Fe and Southern Pacific).

The panel moderator, James M. Ronayne, Assistant Vice President—Intermodal, Chicago and Northwestern Transportation Company, opened the session by noting the rapid growth of intermodal traffic on the railroads and the trend of truckers to take their trailers off the highways and put them on flatcars. He attributed the growth of pig-

gyback in part to innovations from outside railroads.

The panelist from The Atchison, Topeka and Santa Fe Railway Company, Frank J. Kudjer, Manager Perishable Traffic Development, pointed out that the growth in intermodal traffic on the Santa Fe has occurred in the shipment of fresh fruits and vegetables from the West Coast to eastern United States and Canada. In the late 1970s the railroad share of the market was about 12 percent. Construction of the Interstate highway system was allowing truckers to provide faster and more reliable delivery than the railroads, which were using refrigerator cars. Further, the truckers had freedom in pricing.

Although the western railroads began to acquire refrigerated trailers during the 1960s, which reduced transit time by 2 days and resulted in intermodal traffic gains, the return of many surplus empty trailers to the West Coast led to an imbalance of traffic.

In 1976 Santa Fe began studies, with the cooperation of the produce community, on the future for railroads in the movement of fresh fruits and vegetables. Additional studies by the National Commission on Productivity, the Federal Railroad Administration, the U.S. Department of Agriculture, and the



James Ronayne, Assistant Vice President - Intermodal, Chicago and Northwestern Transportation Company, was the panel moderator at the TRB 64th Annual Meeting session on Perishables Via Intermodal Transportation.



Frank J. Kudjer, Manager, Perishable Traffic Development, The Atchison, Topeka and Santa Fe Railway Company, discussed the railroad's experience in the movement of fresh fruits and vegetables by piggyback.

Interstate Commerce Commission all reached the same basic conclusions. The quantity of produce to be transported was found to have increased. With the exception of high-density commodities, such as citrus fruits, carrots, and potatoes, the truckload quantity was preferred by receivers. If the railroads were to increase their share of the market, improved equipment, service reliability, price competitiveness, and commitment would be necessary.

By 1978, Santa Fe was convinced that a package could be put together that would provide sufficient incentives for third parties to acquire refrigerated trailers and join in a partnership arrangement. But Santa Fe had to take three steps: (a) provide ramp-to-ramp service from California and Arizona to Chicago that would be competitive with trucking; (b) offer eastbound intermodal rates on privately owned trailers that were sufficiently low to permit partners to make a profit; and (c) ensure that refrigerated trailers be of a size suitable for westbound dry and perishable freight, larger than the old 40-ft "reefers" but still small enough for two to fit on an 89-ft flatcar. In addition, the Santa Fe partner had to provide complete transportation from shipper to receiver and a westbound load for each

eastbound shipment. Today about one-half of the 7,000 trailers are 45 ft long.

The original eastbound rate per trailer was 30 cents per mile and has increased only moderately during the past 5 years. The westbound rate is the standard rate for other trailers. The total revenue from both directions makes the program profitable.

The partnership with third parties has achieved success beyond the expectations of the Santa Fe planners. In the first year about 3,000 trailers were handled, and the number handled in 1984 was more than 54,300. Kudjer believes that although Santa Fe initiated the program, most of the credit for its success belongs to the third-party trailer owners. The Santa Fe program managers observe that there is still room for growth and expansion into new markets.

R.C. Matney, Executive Vice President, National Piggyback Services, Inc., presented the perspective of one of the largest third-party companies working with Santa Fe and the produce shippers. He credited Santa Fe for putting the third parties into the trailer business and into partnership with Santa Fe. Matney observed that the success of the west-coast-to-Chicago perishable move-



A freight container swings aboard Santa Fe Railway Company's new skeleton-like car that is expected to produce a fuel savings of more than 15 percent compared with conventional equipment. The experimental, articulated car can carry 10 40-ft containers or 20 20-ft containers or a combination of these containers. (photograph from Santa Fe Southern Pacific Corp.)



ment business is dependent on the ability to get the return westbound hauls. This is particularly true during the summer when produce shipments are at the seasonal peak while industrial output in the Northeast is at its seasonal low.

National Piggyback's profits were good during the 1980-1983 period; but by the end of 1983 problems began to arise. Because of the earlier deregulation of the trucking industry, thousands of new nonunion truckers entered the industry and operated at much lower costs than the established common carriers. Legislation in 1982 allowed wider, longer trailers, thereby increasing the capacity of a trailer from about 3,100 to between 3,600 and 3,700 cubic feet. Fuel prices, which peaked in 1982 at \$1.35 to \$1.42 a gallon, have decreased. All of these factors have lowered truckers' costs, which are now in some cases below those of rail.

Another significant problem is that the railroad is not permitting third-party participation in the southwest and southeast. The rates in those markets are not adequate; and when shippers insisted on trying to participate during the high-volume summer period, the service was unacceptable.

A future problem may be the impact of the double-stack container trains that are now being run from the Pacific Coast to Chicago. The steamship lines will be looking for westbound loads to pay for the cost of moving the containers back to the Pacific ports.

Thomas D. Ellen, Vice President and General Manager of the Pacific Fruit Express Company, the marketing and equipment supply subsidiary of Southern Pacific railroad, pointed out that Southern Pacific has a fleet of 5,000 refrigerated boxcars that have been utilized decreasingly during recent years. In 1983 a study performed to determine if there was a use for those cars found that almost one-half of the produce items being shipped to supermarkets were relatively unknown 10 years previously.

Another finding of the study was that



Thomas D. Ellen, Vice President and General Manager, Pacific Fruit Express Company, spoke on the carriage of perishables by trailer on flatcar.

California growers have been expanding cold-storage facilities at a rapid rate, the most important aspect of produce movement being freshness. Generally, minimal transit time is generally considered to be the key to freshness. However, a study showed that specialty commodities, such as lettuce, broccoli, spinach, and tomatoes, were being moved by truck in mixed loads that were compromising freshness. For example, a truckload might consist of one-quarter lettuce, which should be moved at 34° F, one-quarter oranges, which should be moved at 42° F, one-quarter potatoes, which should be moved at -50° F, and one-quarter iced broccoli. During the 4 or 5 days of transit, none of the commodities was kept at its optimal temperature. Even trucks with two-man driving teams, which make the trip in 3 days, were arriving with the produce in worse condition than would have occurred if a full load of just one of the items had been transported in twice the time.

A strategy was evolved to address the issues raised by the study and to utilize the idle refrigerator boxcars. The strategy was based on implementing fundamental changes in the way California agriculture goes about marketing, selling, and distributing produce. The first change was to mix produce at its destination, not origin, and to move each commodity in full loads. The second change was to use railcars as cold storage and thus avoid more capital investments in cold-storage facilities. The most significant change was to move the point of sale

from California to east of the Mississippi. If the sale is at the origin, 6 or 7 days elapse between the time of order placement and the time of delivery. That is, if a supermarket chain calls an order to a grower in California and the order is filled out of the grower's cold storage, the transit time to the eastern chain is 6 or 7 days. If, instead, the order is filled from railcars at a location such as St. Louis, delivery can take place overnight. The order is filled by taking lettuce from one car, celery from another car, and so on, combining the produce into one order on a truck for store delivery. In this manner, delivery can be reduced to a maximum of 2 days and in many cases to 1 day.

In effect, Southern Pacific is performing the warehousing, which is accomplished with nonunion help, keeping costs well below the labor costs of the supermarket warehouses. Although boxcars are being utilized, Ellen suggests that this can also be done with TOFCs, although there has been a great deal of institutional resistance.

Paul Johnston, President of Intermodal Express, Inc., described the operations of another third-party trailer owner. A computerized operating and billing system has been developed for the company's fleet of 375 trailers. Accounting and maintenance records systems are still not developed.

Each load is monitored carefully to make certain it is on schedule, and mechanical problems are monitored so that maintenance people can be contacted. The job of coordination is large, including getting equipment to the right location to be loaded; equipping trailers with proper restraining devices; arranging for trucking at origin, crosstown in Chicago, and at destination; ensuring proper billing; and notifying the customer that the load has arrived.

Panel moderator James M. Ronayne ended the panel discussion by emphasizing the need for improved through-train schedules and greater use of trailers to provide better service and to compete with truckers.