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Cover Page Footnote

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UNION PACIFIC/SOUTHERN PACIFIC MERGER: IMPACT ON SHIPPERS

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In the Summer of '96, Union Pacific Railroad merged with Southern Pacific to create the largest American railroad. Controversy continues to surround the merger. This paper reports results of a recent merger-impact survey. Survey respondents were rail and intermodal shippers. Among the interesting research findings are the following: (1) while shippers report a negative impact due to less rail competition, trackage rights granted to Burlington Northern/Santa Fe have failed to dampen this impact; (2) railroad service has deteriorated, but freight rates have remained stable; and (3) service problems are more severe for rail, as opposed to TOFC/COFC, shippers.

INTRODUCTION

Since merging with Southern Pacific, Union Pacific Railroad has been in the news. Headlines, such as "Union Pacific Says its Network Jammed" and "Local Businesses Steamed over Union Pacific Backlog," tell a tale of congested rail yards, late shipments, missing rail cars, neglected customers and overall poor service. As "Union Pacific's Problems Continue," other headlines, like "Union Pacific Faces Undoing Part of Merger" and "Union Pacific Reports to Feds on Service Meltdown," suggest shipper and federal responses to post-merger service problems. These responses have included diversion of traffic to motor carriers and requiring submission of weekly service reports to the U. S. government, as well as talk of dismantling the merger, opening up access to UP tracks,

and even railroad re-regulation. Some shippers are also laying their own tracks (Machalaba 1998a).

The purpose of this paper is to report results of a recent survey of shippers on the UP/SP railroad merger. The second and third sections briefly describe the merger and market area surveyed--Reno/Sparks, Nevada. Then, the fourth and fifth sections outline research methods and present statistical results, respectively. Finally, the paper closes with a discussion on implications of the results for transportation management.

The Merger

Union Pacific (UP) has sought control of Southern Pacific (SP) since the dawn of this century. In 1901, UP gained financial control of

the Southern Pacific holding company which, in turn, had control of both SP and the Central Pacific (CP) railroads. (On May 10, 1869, UP and CP linked together near Ogden, Utah to form the first transcontinental railroad in North America.) But, in 1912, the U.S. Supreme Court instructed UP to relinquish its 46 percent stake in SP. SP and CP merged in 1959 (Wilner 1997).

On July 3, 1996, the Surface Transportation Board (STB) approved the UP/SP railroad merger. This made UP the largest railroad in the USA, with over 31,000 miles of track in 25 states. UP and Burlington Northern/Santa Fe (BNSF) now control 90 percent of all rail freight in the West. STB approval of the merger came with conditions. One potentially important condition for shippers involves the trackage rights granted to BNSF on all "two-to-one" lanes, i.e. lanes formerly served by both UP and SP (Burke 1996).

Despite STB conditions, the merger was opposed by several groups, including the National Industrial Transportation League (NITL). The NITL is the nation's largest shipper group. According to Bradley (1995): "Shippers worry that the (UP/SP) merger will lead to reduced service--partly as a result of possible line abandon-ments--and higher rates." The merger was also opposed by the Coalition for Competitive Rail Transportation and the United States Justice Department.

Before the merger, UP and SP operated a large number of parallel lines. The consolidation of parallel lines under one railroad affords an opportunity to route faster intermodal trains over one line and slower (e.g. coal) trains over the other (Bradley 1997). Indeed, the UP/SP merger application promised shippers faster TOFC/COFC movement between Chicago and both Northern and Southern California (Wilner

1997). Faster movement of freight is a form of improved service to shippers.

Consolidation of parallel lines, creating two-to-one lanes, can also eliminate competition and reduce incentives the remaining railroad has to improve its service to shippers. In the UP/SP merger, there were more than 130 two-to-one points (Wilner 1998). This concern--that a parallel or side-by-side merger will eliminate competition and result in worse service--has been confirmed in a prior shipper survey (Anon. 1978).

Reno/Sparks

The railroad created Reno, Nevada. CP entered Northern Nevada from the West in early 1868. Since the transcontinental railroad was to be routed along the Truckee River, towns such as Reno and Verdi emerged in the Spring of 1868 (Miluck 1994).

Recently, the railroad has been a source of controversy in Reno. Due to the UP/SP merger, the number of freight trains rolling through downtown Reno is expected to increase from 14 to 25 per day. To handle increased congestion at RR crossings, the federal government recommends speeding up trains through Reno, from 20 to 30 mph (Voyles 1998a). On the other hand, the Reno City Council wants to keep the trains moving at 20 mph. The Council also wants UP to pay \$100 million toward lowering the tracks into a trench under downtown Reno (Voyles 1998b).

Reno-area rail shippers have also been in the news recently. Shippers across a variety of industries--from automobiles to utilities to building supplies, for instance--have reported service problems with UP, the only (rail) show in town. An auto dealer complains about a shipment of 50 new cars being ten days late--and counting. The regional power company is

down to an 18-day supply of coal, but a 30 to 40-day supply is desired. A building supply wholesaler reports three to four week delivery delays on incoming materials. Shippers that have alternatives are starting to shift freight to trucks and/or work with BNSF (Henderson 1997).

The Reno/Sparks market area is fertile ground for understanding the impact of the UP/SP merger on rail and intermodal shippers. The two former railroads linked up at Reno, due to the old UP branch line North of town. Moreover, each railroad had an intermodal terminal in the area, and there are a variety of rail and intermodal shippers in Northern Nevada. In short, the merger made Reno, "the biggest little city in the world," a two-to-one point.

RESEARCH METHODS

Survey data were collected by telephone, and primarily analyzed using t-tests. A list of likely Northern Nevada rail and inter-modal shippers was developed, through consultation with Reno-area logistics and transportation professionals. This list was given to a research bureau at a major University in the West. Bureau staff performed the telephone survey, which lasted approximately ten minutes per completed call. The first survey question asked shippers to estimate the percent of their inbound and outbound freight (by weight) moved by each of the following modes: TOFC/COFC, rail, truckload, less-than-truckload (LTL) and "other." If the percent of TOFC/COFC plus rail freight was zero, for both inbound and outbound movement, the shipper was thanked and spared further questioning. Bureau staff completed surveys with over 30 shippers, representing an estimated 80 percent of rail and inter-modal freight moving into and out of the Reno/Sparks area.

The survey included questions on rail transportation service and overall logistics performance, before and after the merger. Transportation service attributes were drawn from the literature, e.g. Coyle and colleagues (1994). Additional questions probe the expected impact of merger-related changes, such as abandonment of a branch line North of Reno, BNSF trackage rights, and closing of one intermodal facility.

STATISTICAL RESULTS

Overall Impact of Merger-related Changes

Table 1 reveals the overall impact of certain merger-related changes on shipper operations. On average, shippers perceive the impact of BNSF trackage rights over UP/SP lines to be slightly positive--but not statistically significant. While the impact of closing the intermodal (TOFC/COFC) facility in North Reno is perceived to be negative, this impact is also not statistically significant (at $\alpha < .05$). A second TOFC/COFC terminal, in Sparks, remains open to serve intermodal shippers.

However, the impact of abandonment of the UP branch line from Reno-Stead North to Hallelujah Junction, California, is perceived to be negative ($t = -2.99$) and significant ($p\text{-value} = .003$). Prior to the merger, this branch line was UP's sole path to Reno. Western Pacific (WP) ran this branch line North from Reno to Hallelujah Junction until 1982, when UP gained control of both Missouri Pacific (MP) and WP (Tardy 1998; Wilner 1997).

The impact of reduced railroad competition, due to the merger, is also perceived by Northern Nevada rail shippers to be negative ($t = -5.22$) and significant ($p\text{-value} = .000$). This result confirms the findings of a 1978 *Railway*

TABLE 1
IMPACT OF MERGER-RELATED CHANGES ON OPERATIONS*

| Change | Average Impact | t | p-value |
|--------------------------------|----------------|-------|---------|
| BN/SF Trackage Rights | .03 | .44 | .332 |
| Closing of Intermodal Facility | -.21 | -1.65 | .055 |
| Branch Line Abandonment | -.48 | -2.99 | .003 |
| Less Rail Competition | -.79 | -5.22 | .000 |

* scaled from -2 (very negative) to 2 (very positive), with 0 = no impact.

Age shipper survey on rail mergers. Only 3 percent of respondents to that survey favored operating in a region served by a single railroad, and the other 97 percent opposed such an arrangement (Anon. 1978).

Impact of Merger on Logistics Performance

Table 2 shows shipper perceptions of rail freight performance changes, before and after the merger. Performance is measured in terms of freight rates, service availability, transit time, on-time delivery and total logistics costs. A recent Mercer survey of shippers reports that "timeliness" (transit time and on-time delivery) are especially important to intermodal shippers (Anon. 1996).

Shippers responding to the current survey indicated that freight rates are slightly worse (i.e. higher) after the merger, but the change is not statistically significant (see Table 2). However, railroad performance is reported to have deteriorated on all of the other measures, as follows: service availability (t = -3.77), transit time (t = -5.11), on-time delivery (t = -7.10) and total logistics costs (t = -3.42). It is interesting to note that total logistics costs of moving freight via rail have increased—even though freight rates have not. Apparently, shippers are feeling the cost impact of poor service. A lack of timeliness means higher inventory carrying and stockout costs for shippers.

TABLE 2
POST-MERGER PERFORMANCE CHANGES*

| Measure | Average Change | t | p-value |
|-----------------------|----------------|-------|---------|
| Freight Rates | -.03 | -.37 | .356 |
| Service Availability | -.66 | -3.77 | .001 |
| Transit Time | -.97 | -5.11 | .000 |
| On-time Delivery | -1.17 | -7.10 | .000 |
| Total Logistics Costs | -.55 | -3.42 | .001 |

* scaled from -2 (much worse) to 2 (much better), with 0 = same.

TABLE 3
UP/SP PERFORMANCE: BEFORE & AFTER THE MERGER

| Performance Factor | Before Merger | After Merger |
|-----------------------------|---------------|--------------|
| Average Transit Time (days) | 8.6 | 17.8 |
| On-time Delivery | 88.1% | 50.8% |

The survey also asked shippers to estimate average transit time (days) and on-time delivery (percent) provided by the railroad, before and after the merger. These results are presented in Table 3. Note that average transit time has more than doubled, from 8.6 to 17.8 days, since the UP/SP merger. As transit time doubles, so does in-transit or pipeline stock. Moreover, percent of deliveries on-time has fallen from 88.1 to 50.8 percent. Reduced delivery reliability implies higher destination safety stock.

Shipper Reactions to the Merger

As shippers perceive a lack of rail competition--and a decline in service levels--one reasonable reaction is to divert traffic from railroad to motor carrier. Bearth (1997) reports an increase in freight diversion, from rail and intermodal to truck, especially due to the UP situation. The survey asked shippers to estimate the percent of rail and TOFC/COFC traffic (by weight) diverted to truck since the merger. These Reno-area shippers have diverted an average of 9.8 percent of their traffic to motor carrier. The percent of traffic diverted ranged from 0 to 48 percent.

A more extreme reaction is to advocate dismantling the merger. Machalaba (1998b) asserts that momentum toward an unprecedented partial dismantling of the UP/SP merger has been building. The survey asked shippers: "Do you believe the UP/SP merger should be dismantled?" While 59

percent of the respondents replied "no" to this question, 24 percent said "yes." The remaining 17 percent expressed no opinion. An open-ended follow-up question simply asked shippers "why" they replied yes or no to the dismantling question.

Reasons given by the yes (dismantle) group include:

- "it (UP) is a monopoly now, employees are extremely rude"
- "no competition, merger is disastrous"
- "poor management, unprepared, not being corrected"
- "service was better when they (UP and SP) were separate"
- "lack of competition has raised prices"

Among the reasons given by the no group were the following:

- "don't think it (dismantling) would change anything"
- "merger itself is not the problem"
- "it would be more of a mess than it is now"
- "(they, i.e. UP) just need to improve service"
- "what alternative is there?"

Impact of Merger on Intermodal vs. Rail Shippers

Table 4 compares the merger impact on intermodal (TOFC/COFC) vs. rail shippers. The Mercer shipper survey found 48 percent of its respondents agreeing that rail mergers will make TOFC/COFC more attractive (Anon. 1996). Unfortunately, according to Thomas

(1998), service problems at UP are stunting intermodal's growth. UP handles a substantial share of the intermodal volume in the USA. Since most TOFC/COFC shippers can switch to motor carriers with relative ease (Greenfield 1998), negative impacts of the merger should be stronger for rail—rather than intermodal—shippers. Rail shippers tend to be more captive.

TABLE 4
IMPACT OF MERGER ON INTERMODAL VS. RAIL SHIPPERS

| Impact Item ^a | Intermodal Shippers | Rail Shippers | t | p-value |
|--------------------------------|---------------------|---------------|-------------------|---------|
| Closing of Intermodal Facility | -.18 | -.22 | .15 ^b | .440 |
| Branch Line Abandonment | -.09 | -.72 | 2.27 ^c | .016 |
| On-time Delivery | -.73 | -1.44 | 2.26 ^b | .016 |
| Transit Time | -.45 | -1.28 | 1.96 ^c | .036 |

^aFor closing facility and line abandonment, impact is scaled from -2 (very negative) to 2 (very positive), with 0 = no impact. For on-time delivery and transit time, impact is scaled with -2 (much worse) to 2 (much better), with 0 = same.

^bt-statistic based on pooled variances

^ct-statistic based on separate variances

The difference between intermodal and rail shippers' perceptions on the impact of closing the North Reno TOFC/COFC terminal are not statistically significant. Both groups expressed a modest, negative impact (see Table 4). On the other hand, the negative impact of abandonment of the North-bound branch line is stronger for rail shippers, as opposed to intermodal shippers. The difference between the two groups ($t = 2.27$; $p\text{-value} = .016$) is significant at the .05 level.

Post-merger railroad performance, in terms of on-time delivery and transit time, declined for both intermodal and rail shippers. However, rail shippers report a greater service slide, compared to TOFC/COFC shippers, on both on-time delivery (-1.44 vs. -.73) and transit time (-1.28 vs. -.45). Table 4 shows that these differences are statistically significant. It

appears that UP is doing a better job serving its intermodal customers, as opposed to its rail customers. Still, the merger hardly seems to be making intermodal transportation more attractive for shippers.

IMPLICATIONS FOR TRANSPORTATION MANAGEMENT

This section combines implications of the results for carriers (e.g. UP) and government agencies (e.g. the STB), since both are involved in transportation management.

It must be noted that the results are based on a relatively small sample of shippers in one area of the West (Northern Nevada). Further research is needed to expand investigation of the merger impact, by including a larger, more geographically diverse group of shippers

The results compel a person to question conventional wisdom on trackage rights, as conditions for STB approval of rail mergers. Trackage rights are supposed to assuage shipper concerns about less rail competition, especially at two-to-one points like Reno/Sparks. However, shippers responding to the survey felt quite concerned about reduced rail competition since the UP/SP merger—despite trackage rights granted to BNSF. Survey results also suggest that a railroad can close one TOFC/COFC terminal (for consolidation purposes), without upsetting shippers, as long as a second terminal remains open.

There are two main reasons shippers may fear two-to-one points and less rail competition: higher rates and worse service. It is interesting to note that shippers participating in this survey reported a general deterioration of service since the merger, but no significant increase in freight rates. It seems UP is not using its monopoly situation in Northern Nevada to raise rates. Or, perhaps UP's service problems are not all merger-related. As one expert observes, even before the merger, Union Pacific was experiencing "unprecedented problems with service" (Welty 1995).

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