

Department of Management  
Sam M. Walton College of Business  
Fayetteville, AR 72701  
(479) 575-4007

University of Arkansas

# Motor Carrier Effectiveness

*Feedback Report*  
*January, 2005*

## **Project Directors:**

John E. Delery, Ph.D. (jdelery@walton.uark.edu)

Nina Gupta, Ph.D. (ngupta@walton.uark.edu)

Sponsored by the Mack-Blackwell Rural Transportation Study Center, created and supported by the U.S. Department of Transportation

## TABLE OF CONTENTS

Executive Summary .....	3
Section	
I.    Introduction.....	4
II.   Study Sample and Methods .....	5
III.  Descriptive Information .....	7
IV.  Driver Turnover .....	11
V.   Company Performance and Productivity .....	16
VI.  Driver Compensation and Benefits.....	19
VII. Driver Recruiting and Selection.....	22
VIII. Other Human Resources Practices.....	25
IX.  Conclusions.....	30
Exhibits .....	32

## EXECUTIVE SUMMARY

- Questionnaire data were obtained from 326 top managers of large trucking companies; these data were supplemented with information from the *TTS Blue Book of Trucking Companies* and the *SAFER* database.
- Fifty-six percent of the companies in the sample were Truckload (TL) carriers, 27% were Specialized Commodities (SC) carriers, and 17% were Less-than-Truckload (LTL) carriers.
- The average length of haul was 500 miles.
- On average, drivers had been with the company for 3-4 years.
- More companies, particularly in the TL sector, had computers on-board the rigs than did four years ago.
- Driver quit rates averaged 15% overall, and were higher among TL and SC carriers than among LTL carriers.
- Driver discharge rates were lower (3% overall) than before, and were also lowest in the LTL sector.
- Turnover rates were higher in this study than in our previous study.
- The major reported reasons for quitting were pay and benefits, the nature of the driving job, and relationships with supervisors/dispatchers.
- TL and LTL carriers showed marked differences in performance dimensions. SC carriers resembled TL carriers more often than they did LTL carriers.
- LTL carriers showed better performance on *TTS Blue Book* dimensions than did TL or SC carriers.
- Most companies reported being better than they were four years ago; this assessment was not supported by *TTS Blue Book* information.
- Drivers were paid an average of \$37,000/year, and pay and benefits were generally better in LTL companies than in TL companies.
- Seniority, performance, and safety were significant considerations in determining driver pay.
- Compensation innovations are rare in the trucking industry.
- Drivers were recruited most often through walk-in applications, newspaper advertisements, and employee referrals.
- Companies hired about one of every four driver applicants.
- Drug tests, reference checks, background checks, and medical examinations, were the most commonly used selection techniques.
- Previous driving record was the most significant criterion for hiring drivers.
- Driver training was most likely to focus on safety issues.
- LTL companies were more likely to be unionized
- Unionized companies experienced few strikes, lockouts, or unfair labor practice charges.
- Unionized companies were larger, had better pay and benefits for drivers, and better financial performance overall.
- Focus on compensation and benefits, performance appraisals, and staffing issues is recommended to improve driver recruiting and retention.

# SECTION I

## INTRODUCTION

Trucking companies have been wrestling for many years, particularly since deregulation, with the issue of the effective management of the driver work force. Turnover rates among drivers continue to be high, and safety and efficiency problems are not uncommon. A number of solutions have been tried with mixed success and, by and large, the problems persist. The varied success of various driver-related approaches can be attributed, at least in part, to the lack of systematic knowledge and data about driver-related dynamics. This makes it difficult to target specific solutions to specific problems. About a decade ago, we began the process of developing such data bases. Our first systematic efforts were reported to the trucking industry in Gupta, Jenkins, & Delery (1996).<sup>1</sup> In that report, we emphasized that a focus on driver compensation, staffing, training, and performance appraisal issues is needed to reduce turnover and improve financial performance.

The study reported here is a comprehensive follow-up of our earlier work. It represents the second systematic examination of the human resources practices that motor carriers use to recruit, hire, motivate, and retain drivers. It concerns the effects of these practices on a variety of outcomes (e.g., turnover, performance, safety), and it tries to isolate those human resource practices that predict success in the trucking industry. It also explores the pattern of changes in industry trends during the four years that elapsed since our first studies. This study seeks continuing answers to such questions as: What driver-related practices continue to be related to turnover, safety, and efficiency among drivers? How do these outcomes affect bottom-line financial performance over time? Are the same practices affective for any motor carrier? What contingencies determine whether a particular practice leads to success?

These kinds of questions demand systematic answers. Unfortunately, many answers currently available are based on anecdotes, hunches, and “gut feel.” Instead, information obtained in this study, combined with that obtained in our previous study, enables a comprehensive approach to answering these questions based on scientific information. It provides the backdrop against which we can detail the approaches to managing drivers that “work” in the short and long run. In this way, the causes and effects of driver turnover, safety, and efficiency can be isolated and practices that promote financial success can be developed systematically.

This study was sponsored by the Mack-Blackwell National Rural Transportation Study Center (funded by the U.S. Department of Transportation). The purpose of this study is to continue to provide trucking professionals with scientific data that can guide their human resources decisions. In the following pages, we describe the background, methods and sample, and the results of the study.

---

<sup>1</sup> Gupta, N., Jenkins, G.D., Jr., & Delery, J.E. 1996. *Motor Carrier Effectiveness*. University of Arkansas: Feedback report to participants

## SECTION II

### STUDY SAMPLE AND METHODS

This section discusses two points:

- Study sample
- Methods and measures

#### Study Sample

The original population for this study consisted of 1522 trucking firms that reported information to the Interstate Commerce Commission (ICC) and were included in the 1996-1997 *TTS Blue Book of Trucking Companies*. Since an important objective of this study was a systematic investigation of organizational policies and procedures for permanent company drivers across the trucking industry, it was imperative that the firms included in the study have a sufficient number of employees to have established formal human resources policies. Thus, the first criterion for inclusion was that the trucking company have at least 30 total employees in the 1994, 1995, and 1996 calendar year data. The second criterion for inclusion was that the companies have participated in two previous studies conducted by the University of Arkansas. The two criteria resulted in a total of 1522 companies in the sample. Of these, 874 were companies that had not participated earlier, and the remainder had been included in one or both the previous studies. Of the 1522 companies potentially in the sample, 376 were excluded because they had gone out of business in the interim, because they could not be located, because they declined to participate when the initial identification call was made, because they had no company drivers and used “owner-operators” exclusively, or because they were duplicates. The remaining 1146 companies met all relevant criteria and were considered the final sample for the study.

#### Methods and Measures

Following initial mail and telephone contacts, a 24-page questionnaire was mailed to the highest level human resources manager in each of the 1146 companies remaining in the final sample. Several follow-up contacts were made with each potential respondent. In all, completed questionnaires were returned by 326 companies, yielding a response rate of 28.4%. These 326 responses form the major data base for the study.

The questionnaire was developed through a multi-step procedure. First, an extensive review of the human resources management literature and the transportation literature yielded a list of important issues and potential questions. Trucking industry contacts supplied further issues and questions. Our previous study was also a major source of issues and questions. The initial list of issues and questions went through several iterations to hone, clarify, and streamline their focus. Drafts were pretested among trucking company representatives. The final questionnaire incorporates input and learning from many sources, and entailed refining, revising, and revising much of the questionnaire from our earlier study.

The 24-page questionnaire contained the following major sections: (1) Organizational Background Information, (2) Equipment and Technology, (3) Driver Staffing and Turnover, (4) Characteristics of Drivers and Driving Jobs, (5) Driver Compensation and Benefits, (6) Other Driver Management Issues, (7) Labor-Management Relations and HR/Personnel Department, (8) Your (i.e., the respondent's) Perceptions, (9) Business Strategy, and (10) Organizational Performance and Effectiveness. In addition, a glossary of definitions of key terminology was included.

There was some diversity in the organizational position of respondents. For instance, some respondents were owners or top managers of the company, whereas some were members of the Accounting and Benefits departments. For the most part, however, respondents were the highest level human resources managers in the organization.

Data obtained through the questionnaire were supplemented from two sources – the *TTS Blue Book* and information contained in the *SAFER* database maintained on-line on the internet by the Federal Motor Carrier Safety Administration (FMCSA). Information on performance and safety issues, information on structural characteristics of trucking companies (e.g., size, fleet, etc.), and so on was available from these sources and was used to enrich questionnaire data.

### **Summary of Key Points**

- Data were obtained from top managers of 326 large trucking companies
- Questionnaire data were obtained on a large variety of driver management practices, about company background and equipment, and about company effectiveness and success.
- These data were supplemented with information obtained from the *TTS Blue Book* and from the *SAFER* database.

## SECTION III

### DESCRIPTIVE INFORMATION

This section discusses three points:

- Characteristics of companies in the sample
- Driver characteristics and working conditions
- Fleet and equipment characteristics

#### Characteristics of Companies

A total of 326 companies provided data for this study. Of these, 17 did not report their classification. Among the remainder, 173 or 56% classified themselves primarily as General Freight – Truckload (TL) carriers, 52 or about 17% classified themselves primarily as General Freight – Less Than Truckload (LTL) or General Freight – Local carriers, and the remaining 84 or about 27% classified themselves primarily as Specialized Commodity (SC) or Household Goods carriers. Over 80% of the companies were not involved in any inter-modal operations. Many characteristics and dynamics differ across these types of carriers; when relevant, we report information separately for them in the remainder of the document. When we do, we classify the General Freight – Less Than Truckload and General Freight – Local carriers into the LTL category, and Specialized Commodity and Household Goods carriers into the SC category.

Information on other structural characteristics of the companies in the sample is shown in Exhibit III.1. The data generally support the idea that TL and LTL carriers are somewhat different in their structure and operations. On average, the firms employed 96.5 people, but LTL firms were larger, employing 120 individuals, compared to 90 and 93 individuals among TL and SC carriers respectively. LTL carriers were more likely than others to be unionized. About 29% of the LTL firms, about 17% of SC firms, and only about 10% of TL firms reported being unionized. These unionization rates are considerably lower than those reported in Gupta et al. (1996) – 46% among LTL carriers, 31% among SC carriers, and 13% among TL carriers. Thus, the general trend for decreased union support appears to be true of motor carriers as well.

Dispatchers handled an average of 40 drivers each. There were no differences between TL and LTL carriers in this regard, although SC carriers had a somewhat lower ratio of one dispatcher for 34 drivers.

Overall, LTL carriers were larger and more likely to be unionized than TL and SC carriers. Both the number of employees in each company and the proportion of unionized companies were lower than those reported in our previous study.

## **Driver Characteristics and Working Conditions**

A major focus of this study was the human resources approaches used by motor carriers with respect to their drivers. To this end, we obtained information about the characteristics of the drivers in the sample. This information is also shown in Exhibit III.1. On average, the companies in our sample employed about 65 drivers. LTL companies had a higher number of drivers than TL and SC companies.

Most drivers were non-minority males. Fewer than 5% of the drivers were female. Minority representation was not as low, averaging about a fifth of the driver work force. The proportion of minorities rose somewhat from our last survey – from about 4% last time to about 20% this time. The rise was particularly noticeable among LTL companies, where over a quarter of the drivers belonged to minority groups. Although still not representative of the working population in general, the driver work force appears to be moving in that direction.

The average tenure of drivers was 3-4 years, with LTL and SC companies reporting somewhat higher tenure than TL companies. Overall, the companies reported that about a third (30%) of the drivers had been working for them for over five years, and that their drivers had an average of about 6 years of experience driving commercially. Despite turnover issues, therefore, there appears to be some stability in the driver work force.

We asked a number of questions about the conditions under which drivers performed their jobs. This information is shown in Exhibit III.2. Few drivers drive in teams or relays, averaging less than 10% in almost all classifications. The sole exception was LTL companies which reported about 18% of their drivers driving in relays. For the most part, then, trucking companies do not tend to use driver combinations in assigning jobs.

A major concern in the trucking industry is the amount of time drivers spend on the road away from their homes and families. We asked several questions about these issues (Exhibit III.2). Not surprisingly, the average haul was longer in TL firms than in others (550 miles compared to 411 miles for LTL and 400 miles for SC). TL drivers were also home less often, being routed home an average of 4 times per month, compared to 15 times/month among LTL companies and 8 times/month for SC companies. Almost three-fourths (72%) of LTL drivers were home every night. About half (51%) of SC drivers were home every night, but only about a quarter (29%) of TL drivers were home every night. These patterns are similar to those we observed in our previous study. Obviously, to the extent that time on the road is an issue, it is a much bigger issue among TL carriers than the others.

Many drivers consider their rigs to be “homes away from home,” and when they can retain their rigs, it is easier for them to personalize their rigs and make the rigs feel more like home. It is instructive to note that assigning rigs permanently to drivers is the rule rather than the exception in the industry. Almost all TL firms (95%) did so, as did about 88% of SC firms and about 79% of LTL firms. That TL firms were the most likely to assign rigs permanently is to be expected given the nature of the job for these drivers.

We also examined the extent to which motor carriers used temporary workers or “casuals” and owner/operators to do their runs. Only a small proportion (>5%) of the hauls and pick-up/deliveries are done by casuals. Owner/operators are used a bit more often. About a fifth of the hauls and pick-up/deliveries were being done by owner/operators. Owner/operators were more likely to be used by TL and SC firms than by LTL firms.

In short, the driver background characteristics do not resemble the general working population. The differences in working conditions among drivers are largely dependent on the type of company – TL, LTL, and SC firms show some marked differences.

### **Fleet and Equipment Characteristics**

The success of a motor carrier depends to some extent, not only on the ways that drivers are managed, but also on the kind of fleet and equipment it uses. Several questions in the questionnaire focused on these issues. Information on these characteristics is contained in Exhibit III.3. Overall, the companies in our sample owned an average of about 50 tractors. TL, LTL, and SC firms were quite similar in this regard. This is a change from our last study, where LTL firms reported owning twice as many (107) tractors. At least among those who participated in our study, then, it appears that the LTL tractor fleet is smaller. Another difference between the two studies is that this time, companies report leasing more tractors – up from an average of 0 last time to an average of 15 this time. TL and SC firms were likely to lease more tractors (averages of 19 and 18 respectively) than LTL firms (average of 5).

For the most part, tractors in the fleet were conventional. Only about 10% of the tractors were cabovers. The tractors were generally about three years old. LTL firms leased a few straight trucks, TL and SC firms did not. The motor carriers owned rather than leased most of their trailers. TL firms owned the most (an average of 150 trailers), SC firms the fewest (an average of about 115 trailers).

As expected, there were differences across carrier types in the kind of fleet they operated. By far the vast majority (83%) of the LTL fleet was dry vans, which constituted about half (53%) of the TL fleet and about a fifth (20%) of the SC fleet. About a fifth of the fleet for each carrier type was refrigerated vans or “reefers.” Flat beds were used more often by TL firms (21%) than SC firms (14%); LTL firms rarely used flat beds (3%). Almost half of the SC fleet (45%) was tankers, which made only a minuscule proportion of the TL (4%) and LTL (>1%) fleets.

We asked some questions about the technology used on the trucks. About half the TL companies (50%) reported having on-board computers (OBCs) on their trucks; only a third (33%) of the LTL companies reported doing so. These numbers are higher than those reported in our earlier study. Not only were TL companies more likely to report having OBCs, they were also likely to have them on more of their trucks. TL companies had OBCs on an average of about 85% of their trucks, SC companies on about three-quarters (75%) of their trucks, and LTL companies on just over half (56%) of their trucks. We asked about the manufacturers of these OBCs. Among TL and SC carriers, Qualcomm was most likely to be used (53% and 47% respectively); LTL companies were more likely to rely on other sources.

In all, these data suggest that the trucking fleet may have grown a bit smaller over time. There is, however, an increased emphasis on technology and, perhaps, greater specialization across carrier types.

### **Summary of Key Points**

- Fifty-six percent of the companies in the sample were Truckload carriers, 27% were Specialized Commodities carriers, and 17% were Less-than-Truckload carriers.
- The companies employed an average of about 97 people, with LTL carriers having more employees than TL and SC carriers.
- The companies employed an average of 65 drivers, LTL carriers again having more drivers than TL or SC carriers.
- Most drivers were non-minority males, but the proportion of minorities was higher than that in our earlier study.
- Drivers had an average tenure of 3-4 years with the company.
- LTL drivers were routed home about 15 times/month, SC drivers about 8 times/month, and TL drivers about 4 times/month.
- The average haul was 550 miles for TL carriers, 411 miles for LTL carriers, and 400 miles for SC carriers.
- Most drivers, particularly among TL carriers had their rigs permanently assigned to them.
- Only a small proportion of the hauls were done by temporary or “casual” workers or by owner/operators.
- The companies owned an average of about 50 tractors.
- Companies, particularly TL and SC carriers, leased more trailers than in our previous study.
- More companies, particularly TL carriers, reported having on-board computers on their trucks than in our previous study.

## SECTION IV

### DRIVER TURNOVER

This section discusses three points:

- Driver turnover rates
- Reported reasons for driver turnover
- Statistical reasons for driver turnover

#### Driver Turnover Rates

We asked respondents to report information about their total turnover rates among drivers (i.e., turnover from all sources) as well as the discharge rates and quit rates for drivers. A summary of this information is shown in Exhibit IV.1.

*Quit rates* among drivers ranged from 0% to 360%, with an overall median quit rate of 13%.<sup>2</sup> The highest quit rates were observed among TL companies (19.5%), followed by SC companies (15%), and LTL companies (10.50%). These summaries are based on information from 169 respondents. For LTL and TL companies, these rates are somewhat higher than those reported in our previous study. Quit rates at that time were 13% among TL carriers and 2.5% among LTL carriers, and the overall quit rate was 10%. We calculated overall quit rate another way as well. In the survey, we asked respondents to report the number of drivers they had on the payroll during the first two quarters of 1999, and also the number of drivers who quit during the first two quarters of 1999. The ratio of these two numbers produced a median quit rate of 13.33%. slightly lower than the overall quit rate shown in Exhibit IV.1, but still higher than that reported in our previous report.

Information on *discharge rates* was provided by 167 respondents. Overall, discharge rates were lower than quit rates, but followed a similar pattern. Discharge rates ranged from 0% to 80%, with a median of 3%. The median discharge rate for TL and SC carriers was 5%, and the median discharge rate for LTL carriers was 2%. Thus, discharge rates were also a bit higher this time than they were last time (overall discharge rate of 2%). A calculation of discharge rates based on the number of drivers fired in the first two quarters of 1999 divided by the total number of drivers during the first two quarters of 1999 yielded a median discharge rate of 3.03%.

These numbers indicate that trucking companies are still less likely to fire drivers than to have drivers quit the company. It is therefore important to understand the reasons why drivers quit their jobs, an issue discussed later in this section. The reasons for driver turnover are particularly important since quit rates appear to be on the rise if our comparisons between 1994 and 1999 are accurate.

---

<sup>2</sup> When there are some unusual values (e.g., most companies have turnover rates under 100% but one company has a turnover rate of 500%), the median is a better representation of the “average” value than is the arithmetic mean. The median is the point below which 50% of the scores are observed; conversely, 50% of the scores fall above the median. Both mean and median values are shown in Exhibit IV.1.

*Total turnover rates* for the January-June of 1999 were reported by 196 companies. These rates are higher than simply the sum of quits and discharges, largely due to reasons such as retirement, death, layoffs, etc. which are not typically included in either the quit or the discharge figures. Total turnover rates ranged from 0% to 260%, with a median rate of 28%. Total turnover was again higher among TL and SC carriers (medians of 20% and 24% respectively) than among LTL carriers (median of 15%).

Overall, the data indicate that turnover is a more serious problem for TL and SC carriers than LTL carriers. This statement is true regardless of whether quits, discharges, or total turnover is concerned. Furthermore, there is some indication that turnover rates may be rising rather than falling over time. The reasons for driver turnover gain added resonance for this reason.

### **Reported Reasons for Driver Turnover**

We asked respondents how often drivers mentioned a variety of reasons for quitting the company. Their answers are shown in Exhibit IV.2. In this exhibit, we look at the overall reasons mentioned by respondents, rather than reasons by carrier type. Pay and working conditions issues stand out as major reasons that drivers mention for quitting.

“Better pay elsewhere” is one of the primary reasons mentioned by drivers. Virtually all respondents (96.7%) reported this being an issue that they encounter at least some of the time. A related reason is “better benefits elsewhere,” mentioned by 83.6% of the respondents. As shown later in this report, this is perhaps because pay levels are not increasing at a high rate. In any event, a significant key to reducing quit rates may lie in an examination of the pay and benefits package offered to drivers.

A second major issue mentioned as accounting for driver quits is the nature of the work and the working conditions. “Long hours” is something mentioned by over 90% of respondents, as is “scheduling problems.” “Too much time away from home” is another concern listed by over three-quarter of the respondents. To some extent, these problems are inherent in the driving job, particularly the long-haul driving jobs. Still, they are recurring themes in examinations of quit rates among drivers, and warrant systematic attention.

Interestingly, another issue is “not enough driving hours/runs scheduled,” listed by over three-quarters of the companies. The pay and benefits concerns may be attributable to this problem – it is not that drivers are not paid enough per mile. Rather, it is that drivers are not scheduled for enough miles to make an acceptable pay rate. Thus, another key to reducing quit rates may lie in scheduling issues.

Another concern that many companies reported in large numbers as accounting for driver quit rates is “problems with supervisors/dispatchers.” Almost all respondents had concern in this area. Dispatchers are the critical contact point between drivers and the company, and if this relationship is problematic, driver turnover is likely to be of concern. In addressing driver quit

problems, then, it is important to focus, not just on the driver and the driving job, but on supervisors and dispatchers as well.

It is perhaps not surprising that health issues were of concern. Over 90% of companies mentioned health problems as reasons for drivers quitting. It may be of some value to determine the extent to which health worries may be exacerbated by particular policies and practices related to the driver. It is possible that minor changes in policies may alleviate this concern.

Overall, most respondents indicated that drivers left for “better driving jobs” or change in careers.” It is of note that factors such as “inferior cabs,” “low engine power,” “company policy about tractor assignment,” “company policy about driving speed,” “boredom,” generally “poor working conditions,” and “too many layovers” were less likely to influence drivers’ quit decisions. In other words, it is not the specific equipment characteristics and the working conditions, but rather pay and benefits, the long-haul nature of the jobs, and the relationships with supervisors and dispatchers, that are most likely to prompt a driver to quit the company.

### **Statistical Reasons for Driver Turnover**

We also conducted several statistical analyses to determine the factors that are related to driver turnover. We used the turnover numbers we had calculated based on the number of quits/number of drivers here to increase our statistical power. In these analyses, we used the TL, SC/LTL difference as a “control,” i.e., we accounted for these differences statistically so that the companies were comparable on the other dimensions that we were interested in exploring.<sup>3</sup> We were particularly interested in the characteristics of companies and driving jobs that are statistically related to driver quit rates.

We compared quit rates with respect to various structural characteristics of the companies in the sample. We found that larger companies (i.e., those with more employees) have higher quit rates than smaller companies. This is probably due to the fact that the larger the company, the more likely it is to have communication difficulties, bureaucratic problems, and impersonal employer-employee relationships. Driver/dispatcher problems may also be more critical for larger companies. It is noteworthy that unionization did not have a significant effect on quit rates. Turnover is generally expected to be lower among unionized companies, but this was not the case in this sample. As Exhibit IV.1 showed, TL companies were also likely to have higher quit rates than others.

Characteristics of driving jobs were typically unrelated to driver quits. The number of times a driver is home each month, or the number miles that the driver drives, were not related to quit rates. This is somewhat different from what we observed in our last study – times home bore a significant relationship with quit rates then. This may be because “times home” is more applicable to the TL long-haul drivers than to LTL drivers, so that the times home differences are already subsumed under the TL/LTL distinction.

We also looked at the various human resources policies and procedures used by trucking companies as potentially explaining differences in quit rates. Here several significant issues

---

<sup>3</sup> More detailed information on these analyses can be obtained by contacting one of the authors of this report.

emerged. Not surprisingly, we found that higher pay was related to lower quit rates. What is interesting here is that it is not the average pay for a typical driver, but the highest pay that a company offers, that relates to turnover. That is, when drivers see the potential for reasonable earnings in the horizon, they are less likely to quit. But if the maximum possible they can make is low, then they are more likely to seek alternative employment.

Another factor emerging as significant is offering a pension plan. Companies that offered pension plans to drivers were less likely to have drivers quit than those that did not. This may be because pensions are not common among truckers yet, and the potential for retirement is income is a more salient issue among drivers. This contrasts with health insurance, in theory a much more critical benefit. But, as a later exhibit shows, most companies now offer health insurance. The few that do not may experience higher turnover, but this is the exception rather than the rule.

It is interesting to note that companies that did annual performance appraisals of drivers had somewhat higher quit rates than those that did not. This is unexpected, since performance appraisals are considered a good management practice. Most likely, it is not the performance appraisal *per se*, but rather the way it is done, that accounts for this effect. Numerous “objective” measures of driver performance such as safety records are generally available to companies. Perhaps companies that do not conduct performance appraisals generally rely on these objective data to determine pay raises and other benefits. On the other hand, a performance appraisal conducted by supervisors and dispatchers may incorporate subjective and interpersonal factors as well, such that personal likes and dislikes, for example, determine the outcomes more so than driving performance itself. Recall that relationships with supervisors/dispatchers was reported as a major reason for driver quits. Companies with regular performance appraisals may be introducing these biases into driver outcomes. Our results do not suggest that companies do away with performance appraisals. Rather, they indicate that much care and caution must be exercised to ensure that performance appraisals are free of subjectivity and bias.

Overall, the statistical analyses indicate that driver quit rates are more responsive to the human resource decisions of the company than to its structural characteristics or working conditions. Particularly significant are the pay and benefits the company offers as well as the relationships between drivers and their supervisors.

### **Summary of Key Points**

- Driver quit rates were 15% overall, and were highest among TL carriers, followed by SC carriers and LTL carriers, in that order.
- Driver discharge rates were 3% overall, and were lower among LTL carriers than among TL and SC carriers.
- Total turnover rates were 28% overall.
- All three measures of turnover showed increases in the interim between our previous study and this study.
- The major reasons reported by drivers for quitting were pay and benefits, the nature of the driving job, and the relationships with supervisors/dispatchers.

- Statistical analyses confirmed these opinions – the size of the company, the cap for pay level, whether a pension plan is offered, and potentially subjective performance appraisals by supervisors/dispatchers were related to the level of quits.
- Working conditions, unionization, and other structural characteristics of the company, were unrelated to driver quits for the most part.

## SECTION V

### COMPANY PERFORMANCE AND PRODUCTIVITY

This section discusses three points:

- Overall company performance in 1998
- Performance compared to industry counterparts
- Performance over time

#### Overall Company Performance in 1998

We obtained information on a number of company financial performance from data contained in the *TTS Blue Book* for the year 1998. This information is summarized in Exhibit V.1. Because there can be significant differences across carrier types, the information is also shown separately for TL, LTL, and SC companies in the exhibit.

*Operating ratio* ranged from 69.60 to 117.83, and was highest for TL carriers (median = 98.33). SC carriers had a slightly lower operating ratio (median = 96.28), and LTL carriers had the lowest ratio (median = 95.72). Similar patterns were evident for other financial performance measures as well. *Net profit margin* ranged from -15.22 to 29.99, SC and LTL carriers having higher levels (medians = 2.53 and 2.09 respectively) than TL carriers (median = 1.27). There were wide variations on the *return on equity* measure, which ranged from -185.13 to 182.72. LTL carriers had the highest return on equity, followed by SC and TL carriers respectively. *Revenue per mile* corresponded to this pattern as well, with LTL carriers being highest (16.06), followed by SC carriers (1.76) and TL carriers (1.18). *Revenue per ton* was much higher among LTL carriers (123.70) than SC (38.86) or TL carriers (35.72). *Revenue per ton-mile* was .27 for LTL carriers, .11 for SC carriers, and .07 for TL carriers.

Taken together, these data show that there are wide variations across the three carrier types on measures of financial performance. TL carriers show remarkably different results from LTL carriers. SC carriers generally fall somewhere between the two. Overall, LTL carriers tend to show the best performance on these measures, followed by SC carriers. For the most part, TL carriers are the lowest on the financial performance measures.

#### Performance Compared to Industry Counterparts

We asked respondents to compare the performance of their companies with the performance of other companies in the industry. Their answers are shown in Exhibit V.2. For ease of presentation, this exhibit does not show results separately for the different carrier types.

Very few companies reported that their performance was *worse* than that of other companies. Surprisingly, a large number reported themselves as being *better* than others. Over four-fifths of the respondents (82.6%) saw their companies being better in terms of layoff rates, and a similar proportion (84.2%) saw themselves as better in terms of customer retention.

An area that around three-quarters of the companies saw themselves as better than others focused on safety. Driver accident rates, accident rates in general, and accident costs were among the issues on which most respondents saw themselves as superior. This may be because safety is of significant concern to motor carriers, and most make conscious efforts to ensure good safety and low accident rates.

Many measures of driver performance showed similar results, with about three-quarters of the respondents seeing themselves as superior to their industry counterparts. These include on-time deliveries, on-time pick-ups, driver friendliness to customers, drivers' helpfulness to customers, drivers' willingness to accommodate special customer needs, and complaints from customers about drivers. These dimensions are likely to affect customer retention, a criterion on which most companies saw themselves as doing well.

In terms of overall measures of performance and productivity, about three-quarters of the respondents again saw themselves as better than others in the industry. This was true of productivity, employee performance, and overall company performance.

Around half of the respondents was themselves as being average on some dimensions. These include fuel consumption, percent idle time, labor costs, out of route miles, absence rates, and speed limit compliance. Some of these factors (e.g., fuel consumption) may be less controllable than others (e.g., absence rates, labor costs).

Logically, only about half of the companies can be better than others, which means that half should be worse than others. It is not possible for three-quarters of the companies to be better than others. The data in Exhibit V.1 also show wide variations in company performance. The information in Exhibit V.2 implies that many respondents may have an unrealistically "rosy" picture of their company performance, a picture than is out of kilter with hard data. It is imperative that hard measures be used to assess one's own performance. Such an examination would be invaluable in deriving a pragmatic estimate of company performance, determining potential problems, and designing and implementing remedial steps. In this context, it should be noted that respondents had a similarly rosy picture in our last study as well. The passage of time has done little to increase the realism of respondents' assessment of their companies.

### **Performance Over Time**

Respondents also compared the experiences of their company *now* with experiences four years ago, i.e., at the time of our first data collection, on a number of dimension. The resulting assessments are shown in Exhibit V.3. Again, very few companies reported having deteriorated in the interim. It is interesting to note that reported deterioration rates were higher in this study in the past study. That is, in our last study, even fewer people reported having gotten worse. Nevertheless, in general, most companies still do not see themselves as declining on most dimensions.

By far, the highest level of deterioration was reported in terms of driver turnover. About one-fifth (20.9%) of the respondents saw themselves as worse on this aspect, whereas just over

two-fifth (43.7%) saw themselves better. The number of companies reporting deteriorations in this area is not large. Still, driver continues to plague the motor carrier industry, and it is thus troublesome that this is the area where declines are most likely to be seen.

Driver motivation and driver absenteeism were also seen as problematic by about one-tenth (9.6% each) of respondents. These numbers continue to emphasize the importance of human resource policies and practices that improve driver satisfaction and retention.

Improvements were seen most often with respect to driver safety and driver performance. About three quarters (72.5%) of respondents saw improvements in driver safety, and just over two-thirds (67.8%) reported improvements in driver performance. Perhaps emphasis on driver accidents has increased among motor carriers, accounting for these improvements.

Taken together, these data also suggest that companies have a somewhat optimistic picture of their performance. Not only do most companies see themselves as better than their industry counterparts, they also see continued improvements on performance dimensions.

### **Summary of Key Points**

- Many performance differences were noticeable between TL and LTL carriers. SC carriers resembled TL carriers on more dimensions than they did LTL carriers.
- LTL carriers tended to score better on performance dimensions reported in the *TTS Blue Book* than did TL and SC carriers.
- Most respondents compared themselves favorably to their industry counterparts on a variety of performance dimensions. Dimensions on which companies saw themselves most favorably included accidents and safety, driver performance, and overall company performance.
- Most companies reported that they were better now than four years ago on performance dimensions. This was particularly true with respect to driver safety and driver performance.
- Deteriorations were most likely to be reported in terms of driver turnover, but the number of companies reporting deteriorations was still small in absolute terms.
- The actual performance data in the *TTS Blue Book* do not necessarily support the optimistic reports given by respondents.

## SECTION VI

### DRIVER COMPENSATION AND BENEFITS

Driver compensation and benefits emerged as key issues in turnover among drivers. For this reason, compensation and benefits issues are addressed separately here. This section discusses three points:

- Characteristics of driver compensation and benefits
- Factors affecting pay differences across drivers
- Incentive systems and compensation innovations

#### Characteristics of Driver Compensation and Benefits

We asked a number of questions about *how* drivers are paid, and *how much* drivers are paid. Answers to these questions are contained in Exhibit VI.1. By far the vast majority (median = 85%) of TL companies pay drivers on the basis of miles driven, at a rate of 29¢ per mile. This number is up from 26¢ per mile in our last study. In contrast, the majority (median = 62.5%) of LTL carriers pay drivers by the hour, at an average rate of \$14 per hour. This number is up slightly from the \$13.75/hour in our last study. Enough SC companies did not report this information for accurate summaries to be possible. Regardless of whether they paid by the hour or by the mile, LTL companies had higher rates (\$14/hour and 31¢/mile) than did TL companies (\$11/hour and 29¢/mile).

We asked annual pay rates for *average*, *new*, and *senior* drivers. This information is also shown in Exhibit VI.1. Drivers started out at \$30,000/year in TL and LTL firms, and at \$31,750/year in SC firms. Across carrier types, the average pay for new drivers was \$30,000/year, and the average driver typically made \$7000/year more than that. Median pay for a senior driver was \$45,000/year. Median pay for senior drivers was much higher among LTL carriers (\$51,000/year) than among SC (\$45,000/year) carriers, and particularly than among TL carriers (\$41,300/year). In other words, there is almost a \$10,000/year pay difference between senior drivers in LTL versus TL carriers. The pay differences among senior drivers are particularly noteworthy since the pay *cap* emerged as a substantive effect on driver turnover. TL carriers have higher turnover than LTL carriers; they also have a much lower salary maximum. Perhaps it is useful for TL carriers to explore options that increase the top of the pay range for drivers.

Several questions concerned the benefits offered to drivers. Answers to these questions are summarized in Exhibit VI.2. Almost all the companies offered health insurance as a benefit. There are differences across carrier types in the proportion of health insurance premiums paid by the company (versus the driver). The median monthly payments among SC carriers were about \$342 for the company and \$60 for the driver. That is, on average SC companies paid about 86% of the health insurance costs. Among LTL carriers, the driver paid an average of \$25 and the company paid an average of \$250, or about 91% of the premium. Among TL companies, on the other hand, the driver paid an average of \$60 to the company's \$209, i.e., the company paid

about 78% of the premium. It is noteworthy that both the total insurance costs, and the proportion of the costs covered by the company, are lower among TL carriers. The lower pay among TL carriers is thus accompanied by lower health insurance coverage as well.

Recall that the provision of a pension plan was significantly related to driver turnover. Exhibit VI.2 shows that pension plans are not universally offered. It is interesting to observe that a higher proportion of TL carriers (68.5%) report offering pension plans than do LTL carriers (66%) or SC carriers (59.4%). TL and SC carriers contribute an average of 5% of a driver's salary into the pension plan; LTL carriers an average of 4%. On this dimension, then TL carriers come out a little ahead of the other carrier types.

All three carrier types offered an average of 10 days of paid vacation per year. Differences were, however, evident with respect to paid sick leave (LTL carriers offered an average of three days, while the other two types offered none), and with respect to paid holidays (LTL carriers reported seven days compared to six days among TL and SC carriers). The number of paid sick leave days and holidays among LTL carriers is a bit lower than that reported in our previous study.

Overall, LTL carriers on average spent a greater proportion of the payroll (27%) on benefits and services for drivers than did SC (21%) or TL (20%) carriers. Both the direct compensation and the benefits package offered by LTL firms is thus substantially superior to those offered by SC and especially TL carriers. The exception to this is pension coverage. Still, all in all, drivers are better off financially among LTL carriers. This is particularly noteworthy in view of the substantial relationship between compensation and benefits on the one hand and driver quit rates on the other.

### **Factors Affecting Pay Differences Across Drivers**

Not all drivers, even within the same company, are paid the same rate. As we saw, senior drivers, for example, make more money than do new drivers. We asked respondents about the factors that affect pay differences across drivers. Their answers are shown in Exhibit VI.3. It is not surprising that seniority plays a big role in determining pay differences among drivers – almost three-quarters of the companies give it at least some weight. Other factors of importance in pay differences are driver performance and safety, which are emphasized by about two-thirds of the companies.

Factors that play a role, but not as great a role, include driver accident rates, previous driving experience, number of miles driven, traffic violations and on-time delivery. Some of these factors are indeed part of driver performance and safety as well. Perhaps some companies make explicit distinctions among these performance and safety dimensions, and others implicitly incorporate them within the broader labels of performance and safety. In this context, it is useful to recall that companies with formal performance appraisals had *higher* quit rates than those without formal performance appraisals. Perhaps the way the performance dimensions are integrated into pay raises and pay differences accounts for the relationship between performance appraisals and turnover.

It is heartening to note that most companies report that “brown-nosing,” company politics, and how much the dispatcher likes the driver do not affect pay differences among drivers. This raises the question, of course, of whether these influences are indeed absent, or whether the respondents and others higher in the management hierarchy are simply unaware of these influences.

### **Incentive Systems and Compensation Innovations**

We asked about incentive systems and other innovations that can be used to motivate better performance and safety among drivers (Exhibit VI.4). The data show that incentive systems and compensation innovations are not very prevalent in the trucking company. The most common incentives are non-monetary recognition awards and individual incentives tied to individual performance, used to some extent by about two-thirds of the companies. It is interesting in this context that merit pay is much less likely to be reported (fewer than a third of the respondents). These data suggest that companies are more likely to reward drivers individually, but through other means than pay. This raises questions about the responses in the previous section – if merit pay, i.e., pay for performance, is not used, how can differences in pay be due to differences in performance? Perhaps there is not an explicit policy of merit pay, or perhaps companies without merit pay do not have *formal* performance appraisals, but rather just increase pay when drivers excel on some hard criterion such as accident rates. It is certainly useful to explore the extent to which pay differences are actually based on performance, as compared to the extent to which there is only a formal, but not an actual, emphasis on performance.

Employee Stock Ownership Plans (ESOPs) are rarely used, as are gainsharing plans or team-based bonuses. Profit-sharing and company-wide bonuses are more prevalent, perhaps indicating their greater acceptance in the trucking industry.

In all, these data show that trucking companies continue to be very conventional and traditional in their compensation approaches with respect to drivers. There is little experimentation and innovation. It is also rare to see pay and financial rewards being tied systematically to valued driver behaviors.

### **Summary of Key Points**

- Drivers are paid an average of \$37,000 per year, but the pay ranges from \$18,720 to \$130,000.
- TL drivers are generally paid by the mile, and LTL drivers are generally paid by the hour.
- Compensation and benefits levels are highest in the LTL sector, followed by the SC and TL sectors, in that order.
- Seniority, performance, and safety are significant factors in affecting a driver’s rate of pay.
- Compensation innovations and incentive systems are rarely used in the trucking industry.
- Non-monetary recognition is more prevalent in the industry.
- Trucking companies are somewhat likely to use company-wide bonuses and profit-sharing.

## SECTION VII

### DRIVER RECRUITING AND SELECTION

Recruiting and selection of drivers can have a major effect on the extent to which drivers quit or are fired. These issues are thus discussed separately here. This section discusses three points:

- Driver recruiting sources
- Driver selection techniques
- Driver selection criteria

#### Driver Recruiting Sources

We asked respondents about the ways they go about recruiting drivers to the company, i.e., about the sources they use to attract driver applicants. Their answers are shown in Exhibit VII.1.

By far, the most common recruiting methods were walk-ins, employee referrals, and newspaper advertisements. Almost all the companies (97.7%) reported using walk-ins. Employee referrals were used almost as often, by about 93% of respondents. Newspaper advertisements were likewise common (88.3%). Formal recruiting techniques, such as advertisements on trailers, radio and television advertisements, roadside billboards, and employment agencies were seldom used in the trucking industry. It is interesting to note that trailer advertisements are used by almost a quarter of TL carriers (23.9%), less often by SC carriers (15.1%), and rarely used by LTL carriers (6.1%). Likewise, recruiting bounties are much more likely to be used by SC (50.7%) and TL (44.7%) carriers than LTL carriers (22.9%). These patterns continue to be similar to what we observed four years earlier in our previous study.

The picture that emerges is one of a lack of systematic emphasis on driver recruiting. Walk-ins and employee referrals are very informal and cost-effective ways of recruiting, but they may not necessarily yield the best candidates. Newspaper advertisements are popular approaches for recruiting employees for a variety of jobs, although it is not clear whether potential drivers are likely to rely on this source very much as they consider employment opportunities.

The lack of emphasis on recruiting is a bit surprising. Generally, recruiting is de-emphasized when there is a surplus of labor and even small recruiting efforts yield a plentiful supply of qualified employees. Since driver shortages are often experienced by motor carriers, it may be useful to explore other recruiting approaches. It may be particularly useful to explore the value of roadside billboards, radio and television commercials, and advertising on trailers as additional sources of driver candidates.

## **Driver Selection Techniques**

A major staffing concern is the selection process for drivers, i.e., how decisions are made about which applicants to hire. Selection is perhaps the key to effective staffing. For this reason, we asked respondents whether they used different kinds of selection techniques in choosing the drivers to hire, and the few techniques that they relied heavily on. Some of these techniques are considered substantially better than others. The responses are shown in Exhibit VII.2.

A few techniques were likely to be given heavy emphasis in the selection process. About two-thirds of respondents reported heavy use of drug tests, reference checks, background checks, and medical examinations. Many others used these techniques as well, but did not rely heavily on them. Very few motor carriers did not report using drug tests (1.3%), background checks (2.0%) or reference checks (3.3%) at all.

Some techniques were used by many respondents, but were not necessarily given great weight. These include structured and unstructured interviews, performance tests, and physical ability tests.

On the other hand, only about a fifth of the companies used mental ability tests, personality tests, honesty or integrity tests, or English language skills tests. These kinds of tests are often considered to be the best ways to predict who will be a good employee.

In general, it is interesting to note that selection techniques that are generally considered “good” (i.e., techniques that tap into job- and performance-related knowledge, skills, and abilities, such as technical knowledge and cognitive ability) are not prevalent in the industry, whereas techniques that are considered problematic (i.e., techniques that do not provide good job- or performance-related information, such as unstructured interviews) are much more common. Our research indicates that the use of good selection techniques, combined with the ability to be “choosy” among applicants, leads to higher-quality hires. But if motor carriers do not use good selection techniques, they run the risk of hiring drivers who will not perform well and will need to be fired.

The use of good selection techniques is not as important when the pool of applicants from which to choose is very small. But in the trucking industry, we found that in the previous year, an average of 80 people applied for driving jobs, and an average of 20 drivers were hired. That is, only one of four applicants was hired as a driver. This is a favorable situation, and motor carriers have some luxury in being choosy. This situation is particularly suited for using good selection techniques. A rigorous selection program would most likely be beneficial in reducing driver turnover and in increasing the proportion of good drivers in the company.

## **Driver Selection Criteria**

We also asked about the knowledge, skills, and abilities that motor carriers looked for in their selection of drivers. This information is summarized in Exhibit VII.3.

By far the most common criterion for hiring drivers is their previous accident record. Almost all respondents (95.5%) reported placing a great deal of emphasis on this factor. In a related vein, moving violation records and D.O.T. violation records were also considered seriously by most motor carriers (89.9% and 81.4% respectively). More broadly speaking, years of driving experience and employment history were likely to be of concern to most companies (74.1% and 74.8% respectively).

A little over half (56.9%) of the companies reported giving a lot of weight to work ethic in selecting drivers. Background and reference checks are likely to yield information about driving and accident records, but work ethic information generally is derived from unstructured interviews. Unstructured interviews are usually a problematic selection approach. If work ethic is of serious concern to motor carriers, it would be more advisable to use better approaches (such as a paper-and-pencil test) to obtain information on this criterion.

Most companies (70.5%) do not emphasize computer skills when hiring drivers. This criterion may gain more salience as rigs get more technologically sophisticated. About a third of the companies also reported giving no weight to who drivers knew in the company, and to where drivers lived.

For the most part, a large number of companies reported giving at least some weight to other criteria we asked about. These include people skills, problem-solving skills, personal values, communication skills, language skills, and intelligence. These are also many of the criteria that are best measured through techniques (such as skills and abilities tests) rarely used in the trucking industry. In other words, these skills are most likely measured inappropriately and inaccurately. If these skills and abilities are indeed important, it is wise to obtain better information about the extent to which applicants possess them.

Overall, motor carriers continue to use somewhat traditional selection approaches. At the same time, they are attempting to measure many driver characteristics inappropriately. A significant boost could be afforded to driver performance and retention if the initial staffing decisions were made more systematically.

### **Summary of Key Points**

- Drivers are most likely to be hired through newspaper advertisements, walk-ins, and employee referrals.
- Drug tests, reference checks, background checks, and medical examinations were the most commonly used selection techniques.
- Motor carriers hire about one of four applicants as drivers.
- Very few respondents used mental ability tests, personality tests, honesty or integrity tests, and English language skills tests in hiring drivers.
- Previous driving records, including accident rates and moving violations, were the most significant criteria for hiring drivers.
- Work ethic, as well as people skills, communication skills, and intelligence, were given at least some weight in hiring drivers by most companies.
- Overall, the recruiting and selection approaches tended to be quite traditional.
- Motor carriers may be measuring many skills and abilities in inappropriate ways.

## SECTION VIII

### OTHER HUMAN RESOURCES PRACTICES

This section discusses five points

- Performance assessment
- Driver training
- Innovative programs
- Labor-management relationships
- Information-sharing

#### Performance Assessment

The process of performance assessment is critical for improving or maintaining employee performance. About 59% of the companies reported doing formal performance appraisals. Most companies with formal performance appraisals did them once a year. Regardless of whether the performance appraisal was formal or not, we asked respondents about the factors their companies considered important in judging a driver's performance. The responses are shown in Exhibit VIII.1.

By far the most prevalent influence in judging driver performance was accident-free miles driven. Almost three-fourth of respondents (71.7%) relied heavily on this criterion, and another 21.7% gave it some weight. Another critical factor was the number of citations for moving violations, considered to some extent by 88.9% of respondents. Customer/client complaints was likewise used as a reflection of driver performance by most (89.7%) of the companies. Other factors many companies included as indicators of driver performance were percentage of on-time/deliveries/pick-ups and logging compliance. Two more attitudinal dimensions, work ethic and "attitude," were also given some weight by over four-fifths of respondents.

Average gas mileage, idle time, and variance of miles (miles driven versus route miles) were unlikely to be factored into judgments of driver performance by most companies. About two-third of respondents reported not using these factors.

These data indicate that many of the same factors given weight in the driver selection process are also given weight in performance assessment. Accident rates and driving records are almost universally used. At the same time, "softer" criteria such as attitude and work ethic are invoked in performance assessments, just as they are in selection decisions. The use of these softer criteria in assessments may account for the relationship we observed between performance appraisals and quit rates. Softer criteria are important, but often they reflect, not just the underlying dimensions, but also personality and interpersonal differences between supervisors and subordinates. When softer criteria are used, therefore, it is all the more important to ensure that they are being measured accurately, and that the measures indeed reflect the basic dimension of interest.

## **Driver Training**

Driver training has important implications for motor carrier safety and operating performance. For this reason, we asked respondents about the kinds of training they provided to their new and continuing drivers.

On average, respondents provided about 16 hours of training, beyond school for licensing requirements, before a new driver was sent out on the road. SC carriers provided the most training to new drivers, averaging about 38 hours, followed by TL carriers (median = 16 hours) and LTL carriers (median = 8 hours). The specialized nature of SC driving jobs may account for the longer training given to these drivers.

We also asked about the number of hours of training for a typical driver. These responses are shown in Exhibit VIII.2. By far, the most emphasis is given to safe driving/accident prevention training. TL and SC carriers give an average of five hours per year of training in these areas, whereas LTL carriers give an average of four hours per year. All three carrier types provided drivers with an average of one hour of training per year on customer service issues. Technical skills training was more likely to be offered by SC carriers (median = 2 hours/year) than TL carriers (median = 1.5 hours/year) or LTL carriers (median = 1 hour/year). Other interpersonal skills training was not offered by most carriers.

All in all, it appears that driver training is not a major focus among motor carriers. By far the most central focus of training programs was safe driving and accident prevention. On average, respondents provided 5 hours of safe driving and accident prevention training annually to drivers.

## **Innovative Programs**

We asked respondents about a number of “innovative” programs they might use with their drivers. These programs are quite prevalent among non-driving employees in large companies, and it is interesting to assess the extent of their prevalence among motor carriers. The responses are shown in Exhibit VIII.3.

We assessed the extent to which various programs were offered for at least some of the drivers. Exhibit VIII.3 therefore shows the proportion of companies where at least 20% of the drivers were included in the innovative program. The most commonly reported practice was the use of open-door policies. Regardless of carrier type, over four-fifths of the companies reported having open door policies for at least some of their drivers.

The other innovations were seen much more rarely. About a quarter to a third of the companies reported using cafeteria-style benefits plans, Management by Objectives, Total Quality Management Plans, survey feedback, formal grievance procedures, and driver participation groups. Open door policies and grievance procedures were a little more prevalent among LTL carriers, perhaps reflecting the greater likelihood of their being unionized.

Particularly rare were self-managing work teams, job sharing, and labor-management quality of work life programs. These innovations are much more likely to be prevalent among other industries. It may be that the specific nature of the driving job renders these programs less effective in the trucking industry.

### **Labor-Management Relationships**

We determined the proportion of companies in the sample where the drivers were unionized. As noted earlier, about 15% of the companies in the sample were unionized. That is, 45 companies were unionized; 267 were not. Unions were more prevalent in LTL companies (28.85%) than SC (17.28%) or TL companies (9.7%), and the rate of unionization was lower in this study than in our previous study.

We asked the unionized companies about the proportion of their drivers who were covered by collective bargaining agreements. An average of 100% of the drivers were covered, being represented in most cases by the Teamsters.

We also asked these companies about their strike/lockout experiences. Just over 10% of the unionized companies had experienced any strikes, in the past five years, and these few companies had had one strike. No lockouts were reported in the previous five years. Only a third of the unionized companies had had at least one unfair labor practice charge filed against them. One company, however, reported as many as 50 unfair labor practice charges. Grievances were more common, with companies reporting an average of three grievances in the past five years.

Respondents summarized the degree of antagonism/cooperation in their relationships with their unions. On a scale of 1 (antagonistic) to 7 (cooperative), the median response was 6. This indicates that generally speaking, unionized motor carriers have quite a cooperative relationship with the union. Respondents also rated the degree of hostility/friendliness in their relationships. With one being hostile and 7 being friendly, the median response was 5, indicating again that the union-management relationships are reasonably amicable.

We examined differences between unionized and non-unionized companies on a number of dimensions. First, we examined whether financial performance measures differed between the two groups. We focused on operating ratio, net profit margin, return on equity, revenue per mile, revenue per ton, and revenue per ton mile. Some differences were evident on the last three criteria. Unionized companies had higher revenues per mile, higher revenues per ton, and higher revenues per ton mile. No differences were evident on the other criteria.. Turnover rates, both quit rates and discharge rates, were lower in unionized companies than in non-unionized ones. It may be tempting to conclude that unionized companies fare better, at least on some performance measures. It is alternatively possible that LTL carriers are more likely to be unionized and also do better on the performance dimensions. Still, these data do not show the erosion of financial performance that is often invoked as an argument against unionization.

We also compared unionized firms with their non-unionized counterparts on a variety of structural and human resources characteristics. We found that unionized firms were larger, i.e.,

they had more employees. Their drivers had longer commercial driving experience, and they were likely to route the drivers home more often. The drivers were home more often, and drove fewer miles in a year.

We compared unionized and non-unionized firms with respect to driver pay. The *lowest* pay for unionized drivers was about \$31,000; for non-unionized drivers, it was about \$27,000. New drivers were paid, on average, about \$35,600 in unionized firms and about \$30,800 in non-unionized firms. The average driver in a unionized setting was paid about \$41,200 and in a non-unionized setting about \$37,000. The differences were less marked between unionized and non-unionized firms in terms of pay rates for the *highest paid* driver, the driver with the best performance, and the most senior driver although, even here, unionized drivers tended to be paid more. Unionized companies were less likely to emphasize factors such as performance, accident rates, traffic violations, etc., in making distinctions in pay among drivers. Contrary to expectation, however, unionized companies were also less likely to use seniority as a pay criterion. Unionized drivers were likely to have more days of paid sick leave and paid holidays as well. Unionized companies spent more overall on driver benefits than did non-unionized companies. On pay and benefits dimensions, therefore, unionized drivers tend to fare better, a finding that is not particularly surprising.

In short, unionization is less prevalent in the TL sector than the LTL sector, and it is less prevalent now than it was a few years ago. In addition, unionized companies tend to have pleasant relationships with their unions, and strikes, lockouts, grievances, and unfair labor practice charges are rare. Unionized companies tend to have better financial performance and lower driver turnover. The pay and working conditions for drivers also tend to be better.

### **Information-Sharing**

Many scholars encourage companies to share critical information with their employees. We asked respondents about their procedures in this respect. Exhibit VIII.4 shows the proportion of companies that share various kinds of information with at least some (defined as at least 20%) of their drivers.

Three kinds of information was most likely to be shared – the company’s safety record (shared by about 94%), customer expectations (shared by about 87% of companies), and new technologies (shared by about 81% of companies). All three carrier types were likely to give drivers this information. This is in line with an emphasis on safety and customer relations.

On the other hand, financial information about the company was less likely to be provided to drivers. Only about a quarter to a third of the companies in the sample gave drivers information about the performance of competitors, the company’s profits, or the company’s operating expenses. Few TL carriers shared information about the company’s overall operating results, although SC and LTL carriers were a bit more likely to do so. These data indicate that trucking companies, unlike many companies in other sectors, do not tend to share information with drivers. This is perhaps because “empowering” drivers is not as critical a concern in the trucking industry as it is in some other industries.

## Summary of Key Points

- Just over half the companies conducted formal performance appraisals for drivers, usually annually.
- Safety and customer relations were given great weight in performance appraisals, although factors like attitude and work ethic were also used.
- Drivers were given an average of 16 hours of training, beyond school for licensing requirements, before being sent on the road.
- Ongoing driver training was most likely to concern safety issues.
- The most commonly-reported innovation was the use of open-door policies. Self-managing teams and job sharing were rare.
- LTL companies were more likely to be unionized than the others, although unionization among all three carrier types has decreased in the intervening four years.
- Unionized companies experienced few strikes, grievances, or unfair labor practice charges, and described their relationships with the unions as relatively friendly and cooperative.
- Unionized companies were larger, had better pay, benefits, and working conditions for drivers than non-unionized companies.
- Unionized companies were better in measures of financial performance and had lower driver turnover rates than non-unionized companies.
- Motor carriers shared safety and customer information with drivers.
- Motor carriers seldom shared financial and company performance information with drivers.

## SECTION IX

### CONCLUSIONS

The recruitment and retention of good drivers is an ongoing problem in the trucking industry. This study was designed as a follow-up of our previous study to determine the trends in driver management that affect recruitment and retention. It attempted to assess the prevalence of factors in the industry that are related to whether good drivers are attracted to companies, whether they are hired, whether they do a good job, and whether they stay with the company. We described many of these trends in the preceding pages. What do these data say about the issues? They point to several concerns.

First, the fact that driver quit rates are higher than they used to be is of some concern. To some extent, of course, quit rates are affected by the state of the economy. More employees are likely to quit when alternative jobs are plentiful than when they are not. Still, a mark of a good company is that employees are willing to stay with it through good times and through bad times. Thus, the fact that quit rates are higher raises significant questions about how drivers are being managed and why they are quitting. It is necessary to examine the factors that are related to driver turnover.

*Driver rewards and compensation* are one of the most critical factors in this regard. Driver pay levels were up slightly from four years ago, although not a lot. Pay continues to be much lower in the TL sector than in the LTL sector, regardless of whether drivers are paid by the hour or by the mile. A key concern in this regard was the pay cap, or the pay levels for the highest-paid drivers. These levels rose an average of \$5,000 in the interim between two studies. For a new or an average driver this rise in pay levels may be a lot. But when pay ceilings are considered, i.e., when the issue of the most *valued* driver is considered, this increase may be small indeed. The most valued driver is also probably the one who can get the most other offers from competitors, and thus is the most likely to quit. In addition to addressing *average* pay issues, then, it is important to focus on pay caps. If pay caps are sufficiently high, the best drivers are more likely to remain with the company.

This pay difference between the sectors is exacerbated when benefits are considered. LTL carriers, for instance, pay more in, and pay a greater proportion of, the health insurance premiums for drivers. As the current national discussion indicates, health insurance is of substantial concern in the U.S. The existence of a pension plan was also related to driver turnover. About two-thirds of the companies, particularly those in the TL sector, offered pension plans. To improve driver retention, then, it is probably fruitful to consider the cost effectiveness of offering pension plans to drivers.

Somewhat related to the issue of pay and benefits is the issue of *driver performance assessment*. Recall the counter-intuitive finding that drivers were *more* likely to quit in companies that conducted formal performance appraisals. Systematic performance appraisals are considered essentially in companies that manage their human resources properly. So why would this lead to greater turnover? In wrestling with this issue, we looked more deeply into the

performance assessment processes of the industry. What we noted is that many “hard” performance dimensions, such as accident and safety rates, are factored into performance assessments. Of concern, however, was the fact that many “soft” criteria, such as attitude and work ethic, were also part of the assessment. The problem is not one of whether these softer criteria should be included. Rather, the problem is that these softer criteria invariably rely on subjective judgments and can be susceptible to raters’ whims, idiosyncrasies, and biases. When using these factors, it is essential that raters have the ability (i.e., they know which behaviors to focus on) and the motivation (i.e., they are rewarded for doing accurate appraisals) to assess each driver carefully and accurately. Absent these processes to ensure rater ability and motivation, the resulting judgments can be quite problematic. To the extent that that these softer criteria are important, then, it is useful to enhance rater ability and motivation, and to obtain judgments from many different raters. In this way, the performance assessment process can be more closely tailored to ensure driver retention rather than driver turnover.

*Staffing* issues also offer a fertile area for improvement. Recruiting avenues can be expanded to address driver shortages. Some carriers advertise on trailers, but many do not. This recruiting strategy is relatively inexpensive. Radio and television advertising is more expensive, but should be explored in greater depth.

In addition, motor carriers report enjoying a good selection ratio, hiring only one of four applicants. Careful selection can therefore yield substantial benefits. Unfortunately, the industry does not rely heavily on those selection approaches that are uniquely capable of providing high quality applicant information. For instance, attitude, work ethic, and similar soft criteria that are given weight in performance assessment also play a big role in driver selection. Paper-and-pencil and other kinds of tests are available that can provide accurate information on these criteria. Instead, the motor carrier industry often relies on unstructured interviews for this information. Unstructured interviews are notoriously susceptible to biases and inaccuracies. The concerns raised above with performance assessment are equally germane with selection interviews. Thus, a thorough reevaluation of selection techniques may be quite fruitful. Supplementing medical and drug tests and examination of accident and safety records with well-designed tests of motivation, integrity, etc., are likely to provide beneficial results.

Overall, the picture of the industry that we obtained earlier has not changed dramatically. Trucking companies continue to be managed traditionally. There are some gains in driver management issues, but there are also setbacks such as increases in turnover rates. As noted in our previous report, designing and managing effective human resources systems is not easy. It requires ongoing vigilance and concern. Systematic examinations of the practices prevalent, not just in the motor carrier industry, but in business and industry at large as well, are likely to offer extremely useful guidelines to improving driver recruitment and retention.

## **EXHIBITS**

**Exhibit III.1**  
**Characteristics of Companies in the Sample**

	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
<b><i>Organizational Structure</i></b>				
Median number of employees	90	120	93	96.5
Percent of sample with unionized drivers	9.70%	28.85%	17.28%	15.10%
Median number of hierarchical levels	4	4.5	4	4
Median number of drivers reporting to dispatchers	40	40	34	40
<b><i>Driver Characteristics</i></b>				
Median number of drivers	65	72.5	59	65
Mean percent minority drivers	18.03%	25.71%	19.29%	20.26%
Mean percent male drivers	94.50%	96.50%	95.30%	95.06%
Median length of service	36 months	48 months	48 months	42 months

**Exhibit III.2  
Driver Working Conditions**

	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
Mean percent driving in teams	3.56%	8.87%	4.16%	4.67%
Mean percent driving in relays	2.57%	18.43%	6.72%	5.85%
Median times per month drivers routed home	4	15	8	5
Mean percent drivers home every night	28.86%	71.63%	51.03%	42.26%
Median length of haul	550 miles	411 miles	400 miles	500 miles
Mean percent of drivers permanently assigned to rig	95.07%	78.60%	88.49%	90.59%
Mean percent over-the-road hauls by “casuals”	2.26%	6.78%	3.84%	3.48%
Mean percent over-the-road hauls by owner/operators	24.15%	12.69%	24.27%	22.19%
Mean percent pick-up/deliveries by “casuals”	3.13%	5.27%	3.71%	3.67%
Mean percent pick-up/deliveries by owner/operators	21.20%	10.40%	22.28%	19.63%

**Exhibit III.3  
Equipment Characteristics**

	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
<b><i>General Equipment Characteristics</i></b>				
Median number of tractors owned	55	52	47.5	50
Median number of tractors leased	19	5	18	15
Mean percent cabover tractors owned	8.94%	13.08%	14.80%	11.32%
Mean percent of conventional tractors owned	93.17%	90.58%	86.96%	91.08%
Median age of tractors	3 years	4 years	3 years	3 years
Median number of straight trucks owned	0	3.5	0	0
Median number of straight trucks leased	0	0	0	0
Median age of straight trucks	0 years	4 years	5 years	3 years
Median number of trailers owned	150	128.5	114.5	138.5
Median number of trailers leased	1	0	0	0
Median age of trailers	5 years	6 years	7 years	6 years
<b><i>Mean Percent of Fleet That is . . .</i></b>				
Dry vans	52.55	82.59	19.90	52.04
Refrigerated	22.20	14.27	19.76	20.15
Flat beds	20.95	2.73	13.55	15.89
Tankers	3.68	.35	45.49	11.28
<b><i>Percent of Companies Having. . .</i></b>				
On-board computers	49.67%	33.33%	41.89%	44.73%
<b><i>Mean Percent of Trucks Having. . .</i></b>				
On-board computers	84.89%	55.63%	74.63%	78.37%
<b><i>Percent of OBC's Manufactured by . . .</i></b>				
Qualcomm	53.33%	25.00%	46.88%	47.97%
American Mobile	10.66%	12.5%	9.38%	10.60%
Highway Master	18.66%	6.25%	18.75%	17.07%
Other	17.33%	50.00%	25.00%	23.58%

**Exhibit IV.1  
Driver Turnover Rates**

	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
<b><i>Quit Rates</i></b>				
Mean	38.47%	21.31%	23.58%	31.17%
Median	19.50%	10.50%	15.00%	15.00%
Range	0%-360%	0%-100%	0%-90%	0%-360%
<b><i>Discharge Rates</i></b>				
Mean	8.09%	3.84%	6.86%	6.96%
Median	5.00%	2.00%	5.00%	3.00%
Range	0%-80%	0%-25%	0%-35%	0%-80%
<b><i>Total Turnover Rates</i></b>				
Mean	45.42%	24.42%	30.94%	38.07%
Median	20.00%	15.00%	24.00%	28.00%
Range	0%-260%	0%-100%	0%-102%	0%-260%

**Exhibit IV.2**  
**Reasons for Quitting Mentioned By Drivers\***  
**(All Respondents)**

<i>How often do drivers mention the following as reasons for quitting your company?</i>	<b>Percent Responding</b>		
	<b>Never</b>	<b>Some-times</b>	<b>Often</b>
Better pay elsewhere	3.3	64.0	32.7
Too much time away from home	20.2	55.0	24.8
Problems with supervisors/dispatchers	4.7	79.0	16.3
Health problems	7.9	87.1	5.0
Boredom	54.0	45.7	.3
Long hours	10.6	74.6	14.9
Better driving jobs elsewhere	2.6	64.7	32.7
Change in career	5.6	83.2	11.2
Scheduling problems	8.6	80.7	10.6
Not enough driving hours/runs scheduled	18.2	73.6	8.3
Too many layovers	35.8	57.5	6.7
Inferior cabs	49.8	47.5	2.7
Low engine power	44.8	51.8	3.3
Company policy about tractor assignment	54.7	44.0	1.3
Better benefits elsewhere	16.4	68.1	15.5
Poor working conditions	37.7	61.3	1.0
Company policy about driving speed	45.4	50.0	4.6

\* For this exhibit, the responses “Rarely” and “Sometimes” are coded as “Sometimes”, and the responses “Often” and “Almost Always” are coded as “Often.”

**Exhibit V.1**  
**Financial Performance in 1998\***

<b><i>Truckload</i></b>	<b>Median</b>	<b>Range</b>
Operating ratio	98.33	84.73 – 117.83
Net profit margin	1.27	-15.22 – 25.01
Return on equity	7.96	-185.13 – 87.62
Revenue per mile	1.18	.53 – 5.35
Revenue per ton	35.72	3.04 – 234.04
Revenue per ton-mile	.07	.03 - .55
<b><i>LTL</i></b>		
Operating ratio	95.72	85.85 – 110.11
Net profit margin	2.09	-8.65 – 14.12
Return on equity	16.06	-89.78 – 182.72
Revenue per mile	2.38	.97 – 7.99
Revenue per ton	123.70	5.85 – 337.85
Revenue per ton-mile	.27	.07 – 1.06
<b><i>Specialized Commodity</i></b>		
Operating ratio	96.28	69.90 – 108.77
Net profit margin	2.53	-9.33 – 29.99
Return on equity	9.20	-80.89 – 76.98
Revenue per mile	1.76	.85 – 9.08
Revenue per ton	38.86	5.55 – 375.40
Revenue per ton-mile	.11	.04 – 1.77
<b><i>Total Sample</i></b>		
Operating ratio	96.85	69.90 - 117.83
Net profit margin	1.66	-15.22 - 29.99
Return on equity	8.87	-185.13 – 182.72
Revenue per mile	1.43	.53 – 9.08
Revenue per ton	41.86	3.04 – 375.40
Revenue per ton-mile	.09	.03 – 1.77

\* These measures of financial and organizational performance were collected from the *TTS Blue Book of Trucking Companies*. All data are for the 1998 calendar year.

**Exhibit V.2**  
**Comparison of Measures of Organizational Functioning**  
**with Other Companies in the Industry\***  
**(All Respondents)**

<i>Compared to other companies in your industry, are your company's experiences in the following areas better, worse, or about the same?</i>	<b>Percent Responding</b>		
	<b>Ours Is Worse</b>	<b>About the Same</b>	<b>Ours is Better</b>
On-time deliveries	1.3	21.1	77.6
On-time pick-ups	.7	23.5	75.8
Drivers' friendliness to customers	.3	27.5	72.2
Drivers' helpfulness to customers	.3	26.2	73.5
Drivers' willingness to accommodate special customer needs	.3	25.4	74.2
Customer complaints concerning drivers	1.7	27.0	71.3
"Logging" compliance	4.0	29.1	66.9
Drive accident rates	3.7	22.3	74.1
Fuel consumption	6.3	57.5	36.2
Speed limit compliance	4.0	41.4	54.6
Traffic safety rules compliance	1.7	37.4	60.9
Percent idle time	7.0	54.2	38.8
Out of route miles	7.1	46.5	46.5
Quit rates	5.7	39.5	54.8
Layoff rates	1.7	15.6	82.6
Discharge rates	1.0	31.2	67.8
Absence rates	2.7	42.3	55.0
Grievance rates	2.4	32.7	65.0
Productivity	1.3	23.2	75.5
Employee motivation	6.0	31.9	62.1
Employee performance	2.7	21.2	76.1
Labor costs	10.1	47.3	42.6
Insurance costs	12.5	37.4	50.2
Overall company performance	1.7	20.6	77.7
Customer retention	.7	15.1	84.2
Accident rates	2.3	20.8	76.8
Accident costs	2.7	24.2	73.1
Equipment utilization	6.7	18.5	74.8
Workers' compensation costs	5.4	30.7	63.9

\* For this exhibit, the responses "Ours Are Much Worse," "Ours Are Worse," and "Ours Are Slightly Worse" are coded as "Ours Is Worse," and the responses "Ours Are Slightly Better," "Ours Are Better," and "Ours Are Much Better" are coded as "Ours Is Better."

**Exhibit V.3**  
**Comparison of Measures of Organizational Functioning**  
**Four Years Ago and Now\***

<i>Compared to what your company was like four years ago, are your companies experiences in the following areas now better, worse, or about the same?</i>	<b>Percent Responding</b>		
	<b>Worse Now</b>	<b>About the Same</b>	<b>Better Now</b>
On-time deliveries/pick-ups	4.6	41.6	53.8
Drivers' relationships with customers	2.3	39.1	58.6
Driver safety	5.0	22.5	72.5
Driver performance	5.3	26.9	67.8
Driver motivation	9.6	36.9	53.5
Driver absenteeism	9.6	46.5	43.9
Driver turnover	20.9	35.4	43.7

\* For this exhibit, the responses “Much Worse Now,” “Worse,” and “Slightly Worse” are coded as “Worse Now,” and the responses “Slightly Better” and “Better,” and “Much Better Now” are coded as “Better Now.”

**Exhibit VI.1**  
**Characteristics of Driver Compensation**

<b><i>Driver Compensation</i></b>	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
Annual pay for an <i>average</i> driver				
Median	\$35,850	\$40,000	\$38,000	\$37,000
Range	\$21,754-\$55,000	\$18,720-\$58,400	\$20,000-\$130,000	\$18,720-\$130,000
Annual pay for a <i>new</i> driver				
Median	\$30,000	\$30,000	\$31,750	\$30,000
Range	\$18,000-\$48,000	\$14,560-\$61,711	\$14,232-\$90,000	\$14,232-\$90,000
Annual pay for a <i>senior</i> driver				
Median	\$41,300	\$51,000	\$45,000	\$45,000
Range	\$25,000-\$120,000	\$9,000-\$70,000	\$22,000-\$155,000	\$9,000-\$155,000
Median percent drivers paid by miles driven	85%	11.0%	30.0%	50.0%
Median percent drivers paid hourly	1.0%	62.5%	0.0%	2.0%
Median rate per mile	\$.29	\$.31	\$.30	\$.30
Median rate per hour	\$11.00	\$14.00	\$12.00	\$12.00

**Exhibit VI.2  
Characteristics of Driver Benefits**

<b><i>Benefits</i></b>	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
Percent of companies offering health insurance	98.0%	94.2%	92.7%	95.9%
Median monthly company payment	\$209	\$250	\$342.5	\$250
Median monthly driver payment	\$60	\$25	\$60	\$50
Percent of companies offering a pension/retirement plan	68.5%	66.0%	59.4%	65.7%
Median percent of salary contributed by company	5%	4%	5%	5%
Median paid vacation days per year	10 days	10 days	10 days	10 days
Median paid sick leave days per year	0 days	3 days	0 days	0 days
Median paid holidays per year	6 days	7 days	6 days	6 days
Median percent of payroll spent on driver benefits	20%	27%	21%	20%

**Exhibit VI.3**  
**Factors Affecting Pay Differences Across Drivers\***  
**(All Respondents)**

<i>To what extent are difference in pay rates across your drivers based on the following factors?</i>	<b>Percent Responding</b>		
	<b>Not At All</b>	<b>Some</b>	<b>A Lot</b>
Seniority	25.2	29.1	45.8
Driver performance	35.7	36.7	27.5
Number of miles driven	45.4	28.0	26.6
Driver accident rates	40.5	32.9	26.6
Traffic violations	48.8	36.0	15.2
Fuel efficiency	64.5	27.3	8.2
Previous driving experience	43.3	31.1	25.6
On-time delivery	51.7	30.1	18.2
“Brown-nosing”	90.5	8.6	1.0
Company politics	83.9	12.2	3.9
Safety	34.5	29.3	36.2
How much the dispatcher likes the driver	76.2	21.1	2.6

\* For this exhibit, the response “A Little” and “To Some Extent” are coded as “Some” and the responses “To a Large Extent” and “To a Very Great Extent” are coded as “A Lot.”

**Exhibit VI.4**  
**Incentive Systems and Compensation Innovations\***  
**(All Respondents)**

<i>To what extent does your company use the following incentive or bonus systems with drivers?</i>	<b>Percent Responding</b>		
	<b>Not At All</b>	<b>Some</b>	<b>A Lot</b>
Individual incentives tied to individual performance	31.1	33.8	35.1
Work team/group bonuses tied to work team/group performance	80.6	13.2	6.3
Company-wide bonuses tied to company performance	53.0	27.5	19.5
Profit-sharing	59.5	21.4	19.1
Gainsharing	91.4	6.0	2.6
On-the-spot bonuses for exceptional performance	75.4	21.6	3.0
Non-monetary recognition awards for performance	28.2	38.7	33.1
Lump-sum salary increases	72.7	22.0	5.3
Merit pay systems	68.1	20.3	11.6
Employee Stock Ownership Plans (ESOPs)	92.7	3.3	4.0

\* For this exhibit, the response “A Little” and “To Some Extent” are coded as “Some” and the responses “To a Large Extent” and “To a Very Great Extent” are coded as “A Lot.”

**Exhibit VII.1  
Driver Recruiting Sources  
(All Respondents)**

<i>Which methods does your company use to recruit drivers?</i>	<b>Percent using method</b>
Newspaper advertisements	88.3
Roadside billboards	11.5
Trade schools	38.4
Advertisements on trailers	18.6
Radio or television advertisements	15.3
Recruiting bounties	42.6
Walk-ins	97.7
Private employment agencies	10.0
State employment agencies	29.2
Employee referrals	92.9

**Exhibit VII.2**  
**Driver Selection Techniques**  
**(All Respondents)**

<i>Which techniques does your company use to decide which drivers to hire?</i>	<b>Percent Responding</b>		
	<b>Don't Use</b>	<b>Use</b>	<b>Rely Heavily On</b>
Selection Interview - unstructured interviews	38.0	27.4	34.6
Selection Interview - structured interviews	36.6	32.1	31.4
Performance Test – job sample test	60.2	19.7	20.1
Performance Test - other	48.7	30.0	21.3
Background Information – background checks	2.0	34.2	63.8
Background Information – biographical information questionnaires	64.2	27.4	8.4
Background Information – reference checks	3.3	31.5	65.2
Paper and Pencil Tests – mental ability tests	83.4	14.8	1.8
Paper and Pencil Tests – technical knowledge tests	66.8	24.5	8.7
Paper and Pencil Tests – personality tests	87.9	9.6	2.5
Paper and Pencil Tests – honesty or integrity tests	89.0	6.7	4.3
Paper and Pencil Tests – English language skills tests	91.4	6.8	1.8
Other Tests – physical ability tests	60.3	19.1	20.6
Other Tests – medical examinations	6.2	34.6	59.2
Other Tests – drug tests	1.3	25.2	73.5

**Exhibit VII.3  
Driver Selection Criteria\*  
(All Respondents)**

<i>How much weight do you place on the following factors in deciding which drivers to hire?</i>	<b>Percent Responding</b>		
	<b>None</b>	<b>Some</b>	<b>A Lot</b>
Years of driving experience	0.3	25.6	74.1
Accident record	0.3	4.2	95.5
People skills	3.3	69.6	27.1
Moving violation record	0.0	10.1	89.9
D.O.T. violation record	1.0	17.6	81.4
Employment history	0.0	25.2	74.8
Problem-solving skills	13.8	75.7	10.5
Personal values	10.8	67.3	21.9
Work ethic	2.6	40.5	56.9
Communication skills	2.0	70.3	27.8
Who referred them	15.2	62.8	22.0
Who they know in the company	33.7	57.5	8.8
Physical appearance	11.0	66.6	22.4
Language skills	7.2	75.5	17.3
Where they live	28.2	47.7	24.0
Intelligence	7.5	74.8	17.6
Computer skills	70.5	29.5	0.0

\* For this exhibit, the response “A little Weight “ and “Some Weight” are coded as “Some” and the responses “A Lot of Weight” and “A Great Deal of Weight” are coded as “A Lot.”

**Exhibit VIII.1**  
**Performance Assessment**  
**(All Respondents)**

<i>Which factors does your company use to judge a driver's performance?</i>	<b>Percent Responding</b>		
	<b>Don't Use</b>	<b>Use</b>	<b>Rely Heavily On</b>
Percentage of on-time deliveries/pick-ups	19.4	27.8	52.8
Accident-free miles driven	6.7	21.7	71.7
Citations for moving violations	11.1	49.3	39.6
Average gas mileage	67.8	23.3	8.9
Other objective measures of driver behaviors	44.8	45.8	9.4
Customer/Client complaints	10.3	49.7	40.0
Work ethic	19.6	50.7	29.7
Attitude	14.0	46.0	40.0
Supervisor's evaluation	25.8	49.5	24.7
Ability to work with other people	22.0	60.1	17.9
Truck up-keep	27.4	58.5	14.0
Idle time	62.0	30.8	7.2
Logging compliance	14.7	48.2	37.1
Customer/delivery paperwork	16.2	56.8	27.0
Availability to drive when needed	18.9	55.9	25.3
Variance of miles (miles driven vs. route miles)	65.8	26.7	7.5

**Exhibit VIII.2**  
**Hours and Types of Training**  
**(All Respondents)**

<i>How many hours of formal training does a typical driver receive each year in the following areas?</i>	<b>Median Hours</b>			
	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
Safe driving/accident prevention	5.0	4.0	5.0	5.0
Other technical skills	1.5	1.0	2.0	2.0
Customer service	1.0	1.0	1.0	1.0
Other interpersonal skills	.0	.0	.0	.0
Other	.0	1.0	.0	0.5

**Exhibit VIII.3  
Innovative Programs**

<i>Percent responding that at least 20 percent of drivers were currently involved in each program or innovation.</i>	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
Survey feedback	31.0	18.0	35.4	30.3
Job enrichment or redesign	15.6	10.2	21.5	17.1
Quality circles	13.5	16.3	14.5	14.5
Driver participation groups other than quality circles	23.2	22.4	30.8	25.7
Self-managing work teams	5.8	10.2	8.9	7.9
Alternative work schedules (flextime)	16.8	18.4	21.5	19.1
Job sharing	5.2	4.2	11.5	7.2
Joint union-management quality of work life programs	5.8	2.0	9.0	6.5
Formal grievance procedures	25.8	32.0	30.4	28.2
Open-door policies	84.2	85.7	84.8	84.5
Management by objectives	32.7	30.6	37.2	33.4
Total Quality Management Programs	31.2	29.2	35.9	31.7
Flexible spending plan	15.6	12.2	15.2	15.4
Cafeteria-style benefits plan	43.2	36.7	32.1	39.0

**Exhibit VIII.4  
Information Sharing**

<i>Percent responding that at least 20 percent of drivers were routinely provided with information about the following.</i>	<b>Truckload</b>	<b>LTL</b>	<b>Specialized Commodity</b>	<b>Total</b>
The company's overall operating results	34.2	52.0	45.6	41.0
Competitor's relative performance	22.8	31.8	37.5	28.1
Business plans/goals	59.0	64.5	60.0	58.9
Overall fuel efficiency in the company	64.6	31.4	56.3	56.7
Customer expectations	87.3	86.0	87.5	87.2
The company's profits	23.9	43.1	38.0	30.5
The company's operating expenses	28.7	52.9	41.3	35.7
The company's safety record	95.7	98.1	90.0	94.4
New technologies that may affect them	81.5	80.4	78.8	80.8

***Disclaimer:***

The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the information presented herein. This document is disseminated under the sponsorship of the Department of Transportation, University Transportation Centers Program, in the interest of information exchange. The U.S. Government assumes no liability for the contents or use thereof.

***Sponsored and Supported by:***

*Mack-Blackwell National Rural  
Transportation Study Center*  
University of Arkansas  
4190 Bell Engineering Building  
Fayetteville, Arkansas 72701