Hours of Service Preferences: A Case Study of a Midwest Carrier's Drivers

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The length of the working day had been declining for over a century and was a topic of concern when early motor carrier laws were written. Unchanged since the late 1930s, hours of service regulations continue to be debated for possible revision. This report is based on a survey of truck drivers that measured their hours of service preferences, experiences, and backgrounds. Their responses suggest that experienced drivers are more likely to prefer the current regulatory situation, while newer drivers favored changed working hour limits. Discussion includes historical background as well as implications for policy makers, managers, and future researchers.

INTRODUCTION AND BACKGROUND

Hours of service (HOS) regulations for truck drivers are over 60 years old but are facing revisions pending further deliberation in Congress. Major arguments for changing the rules are based on the effects of driver fatigue and working conditions. Fatigue has obvious safety connotations but can detract from overall working conditions and job satisfaction (*1*), factors that contribute to the high turnover rates of drivers. This paper presents the results of a survey of the drivers for a concerned Midwest carrier. Their indicated preferences and problems with HOS regulations, while not necessarily representative of all truckers, can add insight to the continuing debate for future legislative and management changes.

Work Hours: Pressures to Reduce

The eight-hour workday has precedents well before the twentieth century, with examples of English coal miners and ploughmen working shorter shifts in the 1700s (*2*). A 1918 report noted a shift in the U.S. working day from 10 to 8 hours in slaughtering and meatpacking, machine trades, garment production, shipyards, coal mining, and railroads. Reasons centered on the health hazards of fatigue, the "general loss of moral restraint and increase of intemperance," and a lack of leisure time and energy (*3*). During the 1930s, trainmen argued for a 6-hour workday, citing the current high unemployment and the ability to realize "a more cultural existence for workers"(*4*).

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Trucking Hours of Service

In 1933, the average trucker earned $24 per week, but the hours ranged from 50 to 99. According to a 1934 trucking industry code of fair competition, drivers could work up to 108 hours in any two-week period, with overtime pay at one and one-third their normal salary for over 48 hours a week. Federal legislation of trucking came in 1935, when Congress passed the Motor Carrier Act, giving the Interstate Commerce Commission (ICC) the power to regulate the industry (*5*). A National Safety Council survey showed fatigue as exceeding all other causes of accidents and more likely to occur to truck drivers than to other drivers. It noted that most of the well-run truck fleets had already adopted safety measures voluntarily, so the effects of legislation would "reduce competition from and chance of collision with trucks whose drivers are working dangerously long hours" (*6*).

In an early confrontation, the Teamsters Union wanted an 8-hour workday, but lost to an American Trucking Associations proposal for 60-hour weeks and the use of sleeper cabs. The regulation, effective December 1, 1938, allowed interstate truckers to work 10 hours per day before a mandatory eight-hour rest. A year later, the ICC allowed an added 5 hours for loading or unloading (*7*). Other provisions were a limit of 70 hours of driving in 8 days and a requirement for a daily logbook. The regulations became Title 49, Code of Federal Regulations, part 395 (as amended March 1, 1939) and applies to interstate truck drivers engaged in for-hire service (*8*). Two exceptions—emergencies and adverse driving conditions—allow up to two additional hours to complete the run or to reach a safe place (*9*).

HOS continues to receive attention, as motor carriers have experienced a shortage of drivers, leading to high turnover rates and the attendant costs of hiring and training new drivers. Drivers cite compensation, loneliness, unpredictable work schedules, poor working conditions, and lack of advancement opportunities as reasons for leaving (*10*). A survey of 67 truckload carrier executives cited "outdated hours-of-service rules" as one of the biggest safety issues (*11*).

MOTOR CARRIER CASE STUDY

Data Collection

A participating Midwest truckload carrier agreed to distribute and collect a survey of its 100 drivers about their preferences for proposed alternatives for HOS regulations. The questionnaire was a single sheet, folded once to form a four-page booklet. The title page identified the survey and the university affiliation of the researchers.

It asked for three minutes of time and return of the completed survey to a clearly labeled box. Most questions printed inside were structured for easy response, either checking a multiple-choice list or entering a number. Fifty-one surveys were returned in at least partially complete form.

Driver Characteristics

Drivers indicated their age category (20-29, 30-39, etc. and 60 and over) and filled in their years of experience. The median age group was 40 to 49, with 22 drivers under 40 and 26 who were 40 and above, providing two groupings for comparisons. Experience varied from 2 to 50 years, with a median of 10 and a mean of 14.5.

The hypothesis that the mean differences of the experiences of the younger vs. older groups were equal was tested, using the t-test, and rejected (t = 5.65; d.f. = 48; level of significance = .005). Younger drivers averaged 6.6 years of experience, compared with 20.6 years for those 40 and over. While expected, this difference also validates the data, i.e., responses appeared to be sincere. The standard deviation of years of experience—4.0 for the younger drivers and 12.3 for the older—shows that the occupation of driving was entered at various stages of life for the older drivers, possibly after earlier agricultural or manufacturing employment.

The results confirmed that truck driving is a high-turnover occupation. The median number of employer changes was 3; the mean was 3.6; and the range was zero to 15 times. The prime reason was income, cited by 72% of the respondents, which supports Schultz's statement that compensation is the reason drivers leave their jobs (*12*). Other reasons for switching employers were schedule (36%) and equipment (34%).

Preferred Hours of Service Alternatives

Five HOS alternatives were provided, taking their form from limits imposed in other countries or those being proposed for the U.S. Two types of changes were included: one places drivers on a 24-hour clock (as opposed to the current 10 hours driving plus 8 hours rest cycle), and the other increases the minimum rest period by 50% (*13*). The expanded rest period is consistent with the National Transportation Safety Board recommendation "to enable drivers to obtain at least 8 continuous hours of sleep" after driving. The Board concluded that drivers involved in fatigue-related accidents averaged 2.5 hours sleep less than drivers in non-fatigue-related accidents (*14*), because the current 8-hour minimum off-duty time does not allow for other personal needs.

10 Hours Driving and 10 to 12 Hours Off-Duty

The first selection was the current daily driving restriction but with the additional off-duty time, as required in the above proposal for long-haul drivers. As Figure 1 shows, this proposal was picked by only 8% of the drivers.

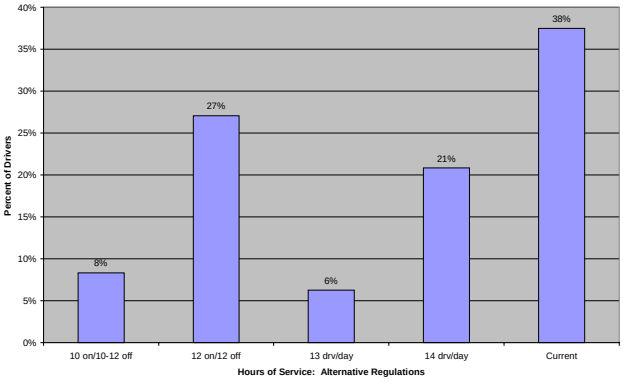

FIGURE 1 Preferences for changed hours of service regulations

12 Hours On-Duty and 12 Hours Off-Duty

The second alternative goes a step beyond simply increasing the rest periods and places drivers on a 24-hour work-rest cycle. This 12 on-12 off format was selected by 27% of respondents. It would increase flexibility of scheduling by permitting up to two additional hours driving per shift and addresses the issue of inadequate sleep by including 50% more rest hours than current practices.

13 Hours Driving per Day

Canadian HOS rules generally match the U.S. rules except for a higher driving-time limitation of 13 hours per day. This proposal, which would provide some uniformity for North American truckers, received the least support (6%).

14 Hours Driving per Day

Perhaps the allure of increased earning power of 14 hours on the road, based on railroad engineer maximums, reduced the potential popularity of the Canadian 13 hours limit; 21% of the sample preferred the higher limit. The combined support for 13 and 14-hours driving per day matched the preference for the 12 and 12 plan. Any of these three alternatives would place drivers on the 24-hour work-rest cycle more typical in the work place than the 18-hour minimum cycle currently provided by the trucking HOS laws.

No Change from Current Regulations

The top-ranked alternative, from 38% of the drivers responding, was keeping the current restrictions. Among the several messages in these responses may be a preference for the familiar—the rules the drivers observe daily—compared to a change, even if the change is simple and provides flexibility plus safety. Second, among the four alternatives for change, the 12 and 12 had the most support. This proposal would place drivers on a 24-hour cycle, allowing drivers a more normal living schedule. The 14 hours of driving limit also had

some support, presumably because it would allow drivers the opportunity to increase their income through longer hours than currently.

Problems Caused by Hours of Service Laws

A clear majority of drivers (58%) occasionally have problems they attribute to HOS laws, as seen in Figure 2. The drivers who said they frequently had problems were just about balanced out by those who never have problems, 20% and 22% respectively. Tight schedules and bad weather were the main problems, with 58% of drivers including them in responses. Scheduling becomes a problem if carriers use the legal maximums as the routine hours expected, with little or no room for delays. Weather problems would lower average speeds and require longer time for completing tightly scheduled trips. Income problems, with 56% of respondents indicating, could be attributed to any restriction on hours driven that may limit an employee's income. The fourth-ranked problem (51%) was traffic, which, like scheduling and weather, is a cause for delay and lower average speeds. Equipment and "other" each received 21%. Other problems included over-sleeping and lack of regular sleep, waiting for loads and other adverse customer influence, layovers, and inconsistent enforcement of states' speed laws.

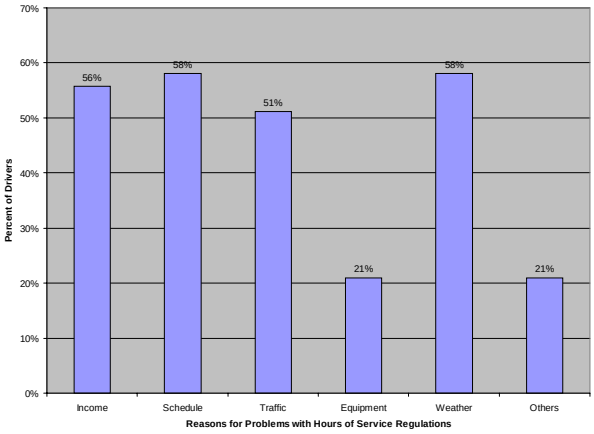

FIGURE 2 Problems caused by hours of service regulations

Comparisons Between Groups

Change vs. Current Regulations

Since the greatest portion of drivers preferred the current regulations to the changes listed, the responses were first grouped into change, including all responses to the four proposed alternatives, vs. current preferences. These two groups were compared with the remaining variables of problem frequency, types of problems, employer changes, reasons for change, experience (0-10 and over 10 yr.), and age (20-39 and 40-up). Table 1 lists the results of the chi-square calculations, showing that two null hypotheses would be rejected at the .05 level of significance:

TABLE 1 Change vs. No Change Comparisons (for Grouped Data)

Variable Cross-tabulated	d.f.	Chi-sq.
Frequency of problems (never, occasionally, frequently)	2	6.06**
Problems caused	5	1.08
Employer changes (0-3 vs. 4-up)	1	0.39
Reasons for change	3	1.69
Experience (0-10 vs. over 10 yr.)	1	4.62**
Age (20-39 vs. 40-up)	1	0.82

Differences significant at:
*** .01 level
** .05 level
* .1 level

Drivers' preference for changing vs. retaining current regulations do not vary by:
(1) the frequency of hours of service problems they have experienced; and
(2) the number of years of driving experience.

The second null hypothesis, with driving experience expressed as a continuous variable, was also rejected (at the .05 level) using a t-test.

Figure 3 shows that 67% of those drivers favoring changed regulations have occasionally experienced HOS problems, compared with 39% of those who would retain the current law. Drivers reporting frequent problems were evenly split (23 and 22% for change vs. current, respectively). Only 10% of the drivers favoring changed laws had never had problems with them, while 39% of those in favor of the status quo had not encounter hours-related problems. In other words, drivers who had more extensive backgrounds relative to HOS were more strongly supporting the concept of changed regulations than were drivers for whom the current laws had not been restrictive.

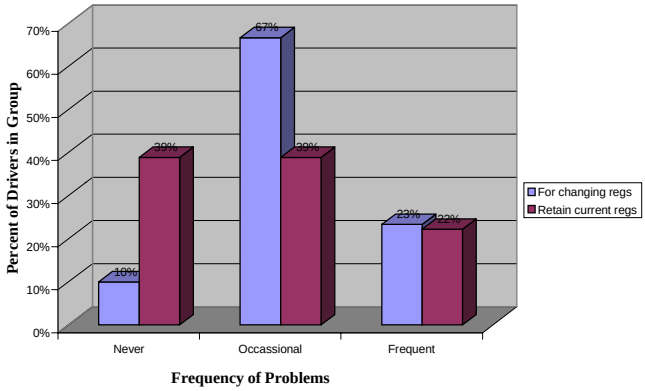

FIGURE 3 Preference for changed or current regulations vs. frequency of problems

Drivers favoring the current regulations tended to be more experienced, as shown in Figure 4. The two groups (change vs. no-change) were mirror images with about one-third and two-thirds for either position, depending on relatively low experience (for change) or high experience (in favor of the old regulations). This outcome

should not be surprising since the experienced drivers must have found their working conditions, including the legal environment, generally acceptable or else they would not have amassed their years of experience. Less experienced drivers would be expected to be more open to considering alternatives that might improve conditions in their more recently chosen occupations.

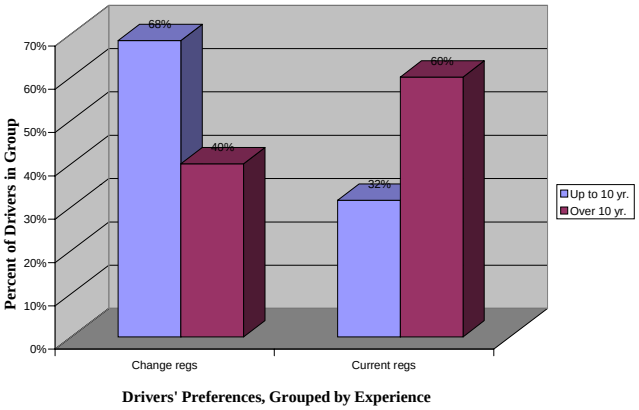

FIGURE 4 Preference for changed or current regulations vs. driving experience

Preferred Alternatives

The selections by drivers who did express a preference for changing HOS regulations were compared with the same variables discussed above. To give non-trivial cell sizes, the proposals for 10 and 12 hours of driving were combined, as were the proposals for 13 and 14 hours. None of the calculated chi-squares support rejecting the null hypotheses that "preferred hours of service changes do not vary by" the variables listed in Table 1. T-tests of the means for the two groups, from the continuous variables of driving experience and employer changes, likewise produced no indications of significant differences. Thus, the ranking of the alternatives displayed in Figure 1 is not challenged for drivers of different ages, driving experience and other background attributes.

CONCLUSIONS

Policy Implications

Background material showed that working hours are a centuries-old controversy. Legislation has limited working hours where public or worker safety has been deemed in peril. The results of this case study of Midwest drivers showed their first preference was for the regulations as they already know them. This outcome should be significant for policy-influencers because it portends some resistance to changes that may be based on sound safety and social reasons. Experienced drivers were most strong in their preference for not changing the current regulations, and they would be a necessary "core" group for a successful transition to any new limits. Their ability to increase their earnings through their driving performance appears to outweigh the desire for shorter hours found in other industries. Less experienced drivers will be more likely to embrace new rules.

Any mandated changes in the current regulations would need to be clearly explained to those who make their living through truck driving. Rationale may be found in the studies of fatigue, which show the necessity for reasonable uninterrupted sleep, and through comparisons with work hours, including overtime policies, in other industries. Conversely, legislators may consider two-tier regulations, with older limits being "grandfathered in" for current drivers who want to retain them (possibly subject to demonstrated safety records), while more restrictive limits apply to newly hired drivers. Lawmakers may also consider overtime provisions, which would provide income enhancements for drivers and also encourage carriers to schedule drivers more in line with their other employees.

Management Implications

Policymakers and carrier managers alike need to balance their concerns with safety and the issues that concern the drivers—those individuals most directly affected by HOS regulations. Rodriguez and Griffin stated that drivers need to be treated "as an equal with other employees" (*15*). One effective step toward meeting that need may be the collection of drivers' viewpoints about the legal limits and then scheduling their working hours with these in mind. Managers need to be aware of drivers' concerns about tight schedules, bad weather, and opportunities for income. Even though the drivers surveyed were generally comfortable with the current hours of service regulations, carrier management must remember that the law established merely the maximums. It was not intended to set day-to-day normal working hours for one occupation that are noticeably longer than for others.

Research Implications

This project was a demonstration of information collected at the worker level rather than a survey of managers. While it was a case study of one firm only, it benefitted from a sample size of 50% of the total drivers, largely through the cooperation of that firm. Other researchers, including those providing background for legislators, may benefit from employing similar surveying and data collection techniques. If and when HOS regulations are revised, their acceptance may be improved if they are based to some degree on input from the drivers, as well as from experts on fatigue and safety and carrier managements concerned with driver turnover.

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