

THE UNIVERSITY OF
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COMPANY PERSPECTIVES ON WORK, FATIGUE AND OCCUPATIONAL HEALTH AND SAFETY IN THE LIGHT AND SHORT HAUL ROAD TRANSPORT SECTOR

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SUMMARY

This report is one of three describing the results of a study of the organisation and characteristics of work in the light and short haul transport sector, in particular looking at attitudes, beliefs and experiences of driver fatigue and at the nature of other occupational health and safety issues confronting drivers and their companies in this industry. The study involved two complementary surveys; one for representatives of companies who employed or contracted light and short haul drivers and another for drivers themselves. The purpose of the two surveys was to examine the views and experiences of companies and drivers on work and safety issues and to compare them. This report describes the results of the company survey and compares the views of management representatives of light trucking companies with those of drivers in the light trucking industry. The company survey involved interviews (telephone or in-person) or self-administered questionnaires of representatives, usually a manager, of light trucking companies. A total of 63 companies completed a company survey, representing a response rate of 52.1 percent of companies who agreed to participate. Participating companies were from Sydney and regional areas and covered a wide range of transport tasks including couriers and taxi trucks, express, refrigerated, a range of specialist goods like food and beverages, building materials and waste and general freight. About half of the participating companies specialised only in transport and for the other half transport was an ancillary part of the business.

The study showed that most of the participating short haul, light trucking companies employed their own drivers, although around one-third used subcontractors. The drivers for these companies worked mainly day shift across a five day week. Daily work duration was around nine hours although some drivers worked 12 to 16 hour shifts. They usually worked 45 hour weeks although the range was broad with some drivers working up to 72 hour weeks. Companies reported that their drivers' work involved a considerable mix of activities. Driving only occupied around half of the time in a shift, with loading and sorting activities dominating the remaining time. Each shift involved around 35 freight stops on average. There were very few differences between companies from urban and regional locations or between companies with transport as their main activity and those where it is an ancillary aspect of the business. The main differences related to the amount of work pressure. Sydney companies and transport only companies both reported that their work was less predictable, with more one-off customers and their drivers did longer hours of work and longer driving time, more overtime and less time in breaks. The different company types were very similar in their reporting of occupational health and safety outcomes and in their views about driver fatigue. A number of questions on the company and driver surveys could be compared. In general, the results were similar for the two groups. Companies and drivers reported different views, however, on some aspects of driver fatigue. Company representatives did not regard fatigue as a significant problem for the light trucking drivers whereas a substantial minority of drivers

did. Company representatives were also more likely to attribute fatigue problems to individual behaviours than to organisational factors.

1 INTRODUCTION

Fatigue is a problem for all drivers, especially those who need to drive for a living and consequently spend long periods at the wheel (Horne and Reyner, 2001). While heavy truck drivers are recognised to be one of the most vulnerable groups for fatigue due to very long and irregular hours of driving (McCartt, Rohrbaugh, Hammer and Fuller, 2000, Carter, Ulfberg, Nystrom and Edling, 2002), light trucks make up a much higher proportion of the vehicle fleet, accounting for 13.0 percent of registered vehicles in NSW compared to 1.6 percent for heavy trucks (RTA, 2006). Despite this, very little is known about the effects of fatigue in the light truck, short haul sector.

Light trucking is thought to be characterised by trips which are shorter point to point, and have higher involvement of other activities such as delivery, loading and unloading compared to the heavy truck sector (Hanowski, Wierwille and Dingus, 2002). These are factors that are quite different from those experienced by long distance truck drivers, but still may contribute to fatigue. A study of the light truck sector provides an opportunity to look at fatigue effects in the basic task of driving but in a context of shorter distances and fewer hours at the wheel combined with potentially much more non-driving work such as loading and unloading and more activity requiring getting in and out of the truck. This therefore provides a useful setting for looking at how fatigue effects may be moderated by other activities and different driving experiences.

This report describes one of three parts of a study of fatigue and occupational health and safety experiences in the light trucking industry. This report focuses on organisational practices and perceptions relating to safety, fatigue and fatigue management in a sample of representatives of companies in NSW that use fleets of light vehicles. The other two reports are a driver survey of work and safety issues, especially fatigue in light truck drivers in NSW and a report which compares the fatigue and occupational health and safety experiences and attitudes of light and heavy truck drivers.

The aim of the current study was to understand the company views about work, fatigue and fatigue management and occupational health and safety of drivers in their company. This study also provides some validation of the reports from drivers of light trucks on a number of the same work characteristics fatigue and occupational health and safety. While this was not a true validation as it was not possible to determine which of the versions from driver or company representative reflected reality, where the two versions are the same, it provides good evidence for the current situation in the industry and possibly more importantly, where the two versions differ, it may reflect points which will require further action.

2 METHOD

2.1 STUDY DESIGN

The study was designed to gather basic information about (i) the organisation and characteristics of drivers' work in the light and short haul transport sector, (ii) the extent to which drivers experience driver fatigue while working, and (iii) the nature of the other occupational health and safety issues confronting drivers and their companies in the industry. Two complementary surveys were developed to gather this information, one for representatives of companies who employed or contracted light and short haul drivers and another for drivers themselves. In this way, the views and experiences of companies and drivers on work and safety issues could be compared. Detailed information about the driver survey is available in a companion report.

For the purposes of the study, light vehicles were defined as rigid body trucks and vans up to 12 tonnes Gross Vehicle Mass (GVM) and used for the transport of goods or materials. At the time the study was conducted, drivers of vehicles up to 12t GVM worked unregulated hours whereas drivers of vehicles over 12t GVM were subject to the National Driving Hours Regulations. Twelve tonnes GVM thus provided a logical point of division between light and heavy vehicles when assessing driver fatigue. In order to capture the range of work carried out by light vehicle drivers while at the same time ensuring that long distance heavy vehicle work patterns were excluded, vehicles in the weight range 4.5-12t GVM were only included if they did short haul work. Short haul work was defined as occurring within a 100km radius of home base, consistent with the definition of 'local' work in the National Driving Hours Regulations.

The company surveys were conducted as telephone or face to face interviews with a person selected by their company who was willing to be interviewed. This person needed to be familiar with both the drivers' work and with the occupational health and safety (OHS) policies and practices of the company. The company survey could be self-completed if the participants preferred this mode of administration. Company representatives who completed the survey themselves returned it to the researchers using reply paid post.

All the people taking part in the study received a Participant Information Statement detailing the aims of the study and their rights as research participants. Informed consent was obtained from those people taking part in interviews and all survey forms were anonymous.

The study was approved by the University of New South Wales Human Research Ethics Committee (HREC 04210).

2.2 SAMPLING AND RECRUITMENT

Little information was available about the number or distribution of companies and drivers engaged in light and short haul transport to guide sampling. A statewide mail-out to a random sample of businesses with vans and light trucks registered with the NSW Roads and Traffic Authority (RTA) was not pursued because of privacy concerns and because these data would not distinguish registrations of trades vehicles from goods carrying vehicles. Instead, companies in selected geographical areas were identified from local Yellow Pages phone listings and were contacted directly.

Published data on light commercial vehicle registrations (RTA, 2003) were used to identify those local government areas (LGAs) in the state that had the largest proportions of vans and light trucks on register and were thus most likely to provide a sufficiently large pool of potential participants. Although the registration data only included utilities, vans and rigid body trucks up to 4.5t GVM and did not distinguish trades and goods vehicles, they were considered acceptable as a general guide for identifying geographical areas to be sampled. Seven areas were selected which provided both geographical spread across the state as well as relatively high vehicle registrations. Combined, the areas accounted for 55.3% of light commercial vehicle registrations in the state.

Table 1: Geographical areas sampled with main LGAs and percent of light commercial vehicles registered in NSW

| Selected geographical areas | Main LGAs in area with % of light commercial vehicles registered in NSW | Total % of light commercial vehicles registered in NSW |
|------------------------------------|---|---|
| Sydney | All | 37.6 |
| Regional: | | 17.7 |
| ▪ Hunter | <i>Newcastle City (1.96%), Maitland City (1.14%), Cessnock City (0.91%), Singleton (0.57)</i> | 4.6 |
| ▪ Illawarra | <i>Wollongong City (2.33%), Shellharbour City (0.86%)</i> | 3.2 |
| ▪ Central Coast | <i>Gosford City (2.18%), Wyong (1.96)</i> | 4.1 |
| ▪ Central West | <i>Dubbo City (0.98%), Orange City (0.88%), Bathurst City (0.80%), Mudgee (0.63%)</i> | 3.3 |
| ▪ Wagga | <i>Wagga Wagga City</i> | 1.3 |
| ▪ Coffs Harbour | <i>Coffs Harbour City</i> | 1.2 |

Table 1 details the main LGAs in these areas together with the percentages of light commercial vehicles on register. Because proportional sampling of the selected geographical areas would result in under-representation of regional registrations overall, a strategy of intentional over-sampling of these areas

was employed with the aim of ensuring that at least one quarter of the survey participants would be from regional areas. It was anticipated that this would yield enough participants to allow statistical comparison of Sydney and regional companies.

Internet telephone listings for the seven geographical areas were searched for 31 categories of business likely to be engaged in light transport, including transport specialists, producers and product suppliers (Appendix 1). Search categories were initially selected to cover all of the main freight sectors in the industry. Additional search categories were then included whenever a major company in a sector failed to be captured by any of the existing categories. The resulting company lists for each geographical area were edited for duplicate entries and were randomly ordered. Recruitment calls to companies were then made serially through each list, either until the list was exhausted or until data collection was discontinued. A minimum of two attempts were made to contact every listed company that failed to answer the phone on the first call.

When called, companies were advised of the purpose of the study and their eligibility to participate, in terms of vehicle size and work area, was established. Interested companies were invited to schedule a time for a company interview. Interviews were conducted either by telephone or face-to-face as convenient or, if required, a copy of the survey was forwarded for self completion together with a reply paid envelope. Companies were also asked to distribute survey materials, including reply paid envelopes, to the light and short haul drivers at their company or to allow researchers on site to distribute them.

Recruitment for the study began in November 2004 and was eventually terminated on the 7th of November 2005.

2.3 SURVEY INSTRUMENTS

The company and driver surveys were developed on the basis of consultations, meetings and interviews with company representatives across a number of sectors of the light transport industry including express freight, couriers, removals, food transport and waste transport. Discussions were also held with drivers (light transport driver delegates of the NSW Transport Workers' Union (NSW TWU)) and with driver and company representative bodies (NSW TWU; NSW Road Transport Association (NSW RTA); NSW WorkCover Transport and Storage Industry Reference Group). These meetings were held in March and April 2004 with the purpose of identifying the range of work practices and safety issues that needed to be addressed in the surveys and to determine what avenues were available for recruiting drivers and companies. The resulting draft surveys also incorporated some questions from earlier research on fatigue in the long distance heavy vehicle road transport industry (Williamson, Feyer, Friswell & Sadural, 2001; Feyer, Williamson, Friswell & Sadural, 2001). Feedback on the draft survey forms

was invited from the transport and OHS agencies funding the study, as well as from the NSW TWU and the NSW RTA. The surveys were trialed by volunteer drivers and company representatives recruited through the NSW TWU and the NSW RTA to ensure usability and relevance. Modifications to the surveys were made in response to feedback.

In its final form, the company survey consisted primarily of multiple choice questions organised into five main sections (Appendix 2). Section one concerned the position of the respondent within the company. Section two concerned the primary business of the company – its structure, size, freight task, area of operation, and workforce, including the type and number of drivers and their remuneration arrangements. The third section gathered information about the drivers work, including their working hours and shift rosters, the company's work scheduling practices and drivers' daily tasks. In addition the survey asked about the predictability of the customer base and the extent to which work was dependent on other elements in the transport chain. At the end of this section, respondents were asked to list the top three safety problems for their drivers. Section four was devoted to questions about driver fatigue. In particular, respondents were asked how much of a problem fatigue posed in the industry and for their own drivers. In order to gauge the level of understanding about fatigue among company representatives, they were asked to make judgments about the relative importance of a range of potential contributors to the development of fatigue. For this section, respondents were instructed to consider drivers generally, not simply those at their own company. They were also asked for their beliefs about the helpfulness of strategies that drivers might use to combat fatigue. The section concluded with questions about fatigue management policies and practices at the company. The final section of the survey focused on OHS issues more generally and addressed health policies, driver OHS training, provision of personal protective equipment, the hazards faced by drivers' at work, as well as hazard reporting and action procedures. In addition, information was sought about the record of vehicle crashes and occupational injury and illness among drivers at the company in the previous year.

The driver surveys adopted a similar format to the company surveys, but the focus of the questions was more strongly on the driver's own experiences rather than on company policy and practice. A number of the questions on work, fatigue and OHS issues that were used in the company survey were also asked of drivers so that comparisons could be drawn. These included a breakdown of work information, such as the amount and timing of the work and scheduling; the problem of fatigue, such as opinions about contributors to fatigue, and strategies the driver and company can potentially employ to manage driver fatigue; and OHS hazards and experiences, such as company OH&S practices, policies and training.

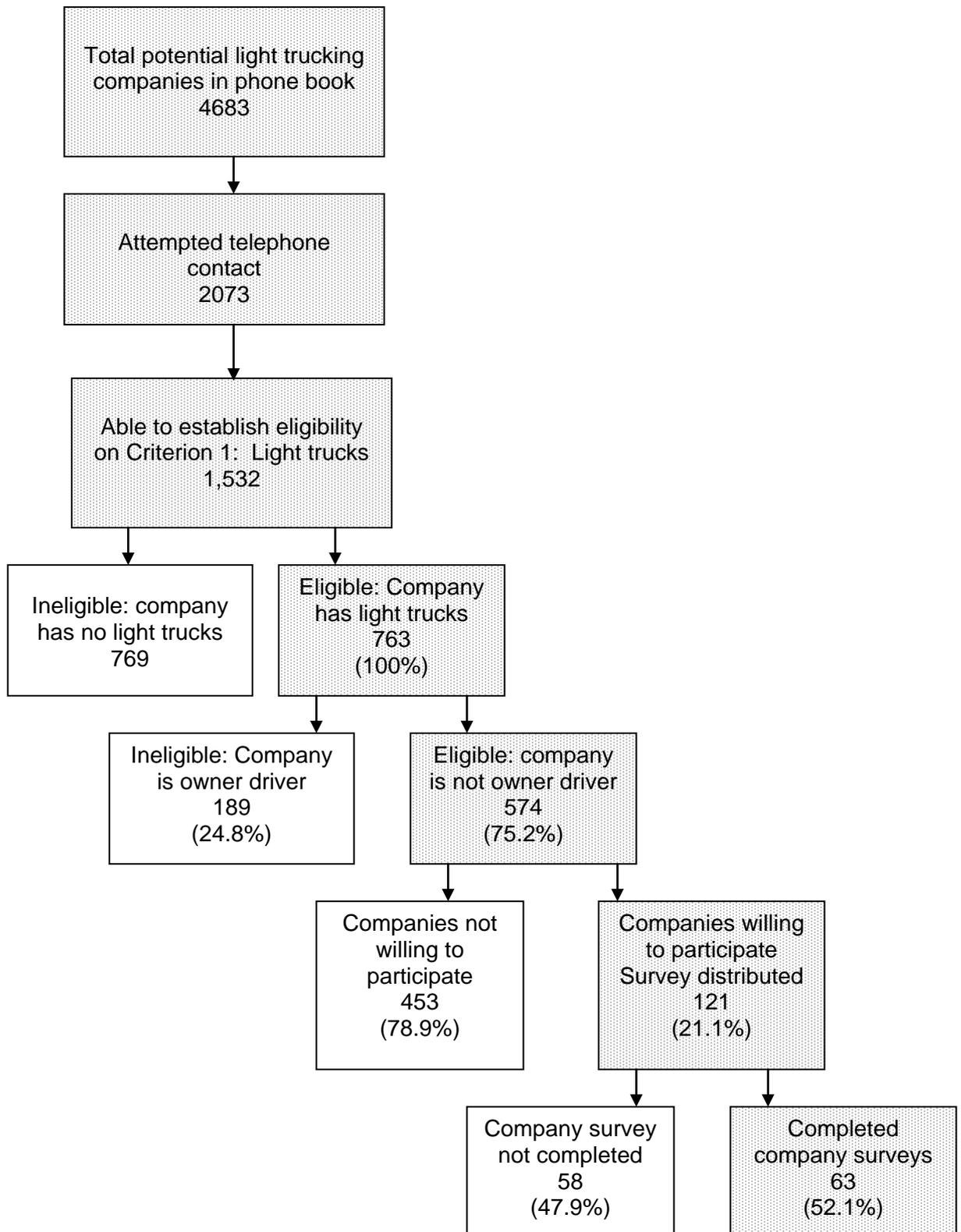
Both the driver and company surveys took about one hour to complete.

2.4 RESPONSE RATES

Figure 1 is a flow diagram of the process of identifying and recruiting eligible companies in the selected geographical areas. The main criterion for eligibility was that the company had light trucks and did short haul work. In addition, for the company survey, eligible companies could not include owner drivers; instead they were invited to participate in the driver survey. As shown in Figure 1, a very large number of potentially eligible companies were listed in the selected geographical area. Of these, attempts were made to contact nearly half (44.3%, 2073 companies) and successful contact was made with nearly three-quarters of them (73.9%). The main reasons for lack of contact included disconnected telephones, businesses closed, no answer or no response to left messages or termination of call before eligibility could be established. Of the companies where contact was made, half (49.8%, 763 companies) were identified as using light trucks. About 25 percent of these companies were owner drivers so were also excluded from the pool of eligible companies. This left a total of 574 companies that were eligible on all selection criteria. All of these companies were invited to participate in the company survey by interview or by self-administered survey. Just over one in five companies were willing to participate in the survey.

Completed surveys were obtained from 63 company representatives, representing an overall response rate for distributed surveys of 52.1 percent. A total of 55 interviews were conducted (telephone interview = 15.7% of distributed surveys; face to face interview = 29.8% of distributed surveys) and 66 self-administered surveys were sent to companies (6.6% of distributed surveys). The response rate for self-administered company survey was 12.1 percent. The driver data used for comparison in this report are based on a total of 321 surveys returned. Details of the driver survey can be found in the companion report, Driver perspectives on work, fatigue and OHS in the light and short haul road transport sector.

Figure 1: Flow diagram of the recruitment of companies to the study and completion of the company survey by company representatives



In order to explore the extent to which the final composition of the sample of companies who participated in the company survey is similar to the composition of the eligible companies, the characteristics of companies who completed and did not complete the surveys were compared. The possible comparisons were constrained by the limited information available about non-participants. It was possible to look at the general type of transport task done by each company and the geographic location of each company.

As shown in Table 2, the distribution of transport task for the completed survey sample was quite similar to that of all eligible light trucking companies since the most common types of transport tasks in both were transport specialists, construction/landscaping and food/beverages. They differed, however in the higher representation in the company survey sample of companies transporting groceries/store supplies and lower representation of removals companies.

Table 2: Comparison of participation of companies in the company survey for companies doing different transport tasks

| Transport task | Eligible on Criterion 1: Light trucks | | Eligible (light truck/ not owner driver) Survey distributed | | Company survey not completed | | Company survey completed | |
|--------------------------|---|------|--|------|------------------------------------|------|--------------------------------|------|
| | n | % | n | % | n | % | n | % |
| Construction/landscaping | 195 | 25.5 | 29 | 24.0 | 16 | 27.6 | 13 | 20.6 |
| Waste | 77 | 10.1 | 5 | 4.1 | 1 | 1.7 | 4 | 6.6 |
| Food/beverages | 134 | 17.5 | 23 | 19.0 | 13 | 22.4 | 10 | 15.9 |
| Transport Specialists | 203 | 26.6 | 36 | 29.8 | 14 | 24.1 | 22 | 34.9 |
| Groceries/store supplies | 29 | 3.8 | 13 | 10.7 | 4 | 6.9 | 9 | 14.3 |
| Removals | 125 | 16.4 | 15 | 12.4 | 10 | 17.2 | 5 | 7.9 |
| Total | 763 | 100 | 121 | 100 | 58 | 100 | 63 | 100 |

As shown in Table 3, the company survey sample contained a somewhat higher representation of Central West companies and a slightly lower representation of companies from the Central Coast and Hunter regions compared to all eligible light trucking companies. Interestingly, all of the companies that initially agreed to participate from the Illawarra or Central West regions did complete the survey. This data also shows that the aim of obtaining at least one-quarter of the sample from regional/rural areas was achieved, as regional/rural areas accounted for 52.4 percent of participating companies.

Table 3: Participation of companies in the company survey according to geographic region

| Region | Eligible on Criterion 1: Light trucks n,% | | Eligible (light truck/ not owner driver) Survey distributed n,% | | Company survey not completed n,% | | Company survey completed n,% | |
|---------------|--|-------------|---|-------------|-------------------------------------|-------------|---------------------------------|-------------|
| Sydney | 290 | 38.0 | 56 | 40.6 | 26 | 44.8 | 22, | 34.9 |
| Central Coast | 71 | 9.3 | 11 | 8.0 | 8 | 13.8 | 3, | 4.8 |
| Illawarra | 50 | 6.5 | 7 | 5.1 | 0 | 0 | 5, | 7.9 |
| Hunter | 134 | 17.5 | 32 | 23.2 | 22 | 37.9 | 8, | 12.7 |
| Coffs Harbour | 32 | 4.2 | 6 | 4.3 | 1 | 1.7 | 4, | 6.3 |
| Wagga Wagga | 84 | 11.0 | 9 | 6.5 | 1 | 1.7 | 7, | 11.1 |
| Central West | 102 | 13.4 | 17 | 12.3 | 0 | 0 | 14, | 22.2 |
| Total | 763 | 100 | 121 | 100 | 58 | 100 | 63, | 100 |

2.5 ANALYSIS

Data from all participating company representatives were described. Exploratory comparisons were then conducted between Sydney and regional companies and between companies specialising in transport and those with ancillary transport operations. It was hypothesized that differences in the business and traffic environments between the large city of Sydney and smaller regional centres may affect drivers' work, the safety risks they confront and the safety practices adopted by companies.

Comparisons between these subgroups of companies on categorical measures were conducted using Chi-square tests or Fishers' Exact tests. Independent samples t tests or nonparametric Mann-Whitney tests were used for comparisons of continuous variables.

Because of the exploratory nature of the survey, a liberal strategy was adopted whereby alpha was set at 0.05 for all analyses.

All analyses were conducted using SPSS software.

In addition, the patterns of responses from company representatives were compared with those from drivers who participated in the driver survey for questions that were the same or similar for both surveys. No statistical analysis of these comparisons was attempted due to the large differences in sample sizes between the two groups.

3 RESULTS

Table 4 shows the characteristics of the company representatives who responded to the company survey. Most respondents were managers and most came from regional areas of NSW, although nearly half were located in the wider Sydney region, including Central Coast and Illawarra. The majority of companies represented were incorporated companies (77.8%), they were fairly evenly spread between having transport as the main business or as an ancillary function and between small and larger companies. While the majority of transport specialists were road freight operators, a small section of the sample were freight forwarders. The area covered by the work was fairly evenly spread across the companies with around half doing work within 50kms of base and the remainder ranging more widely, but only around one in six ranging further than 100km of base.

Table 4: Demographic characteristics of company representatives who participated in the survey compared to participants in the driver survey

| | Companies % | Drivers % |
|-----------------------------------|----------------|----------------------------|
| Location | <i>n</i> =63 | <i>n</i> =321 |
| Sydney | 34.9 | 55.1 |
| Regional | 65.1 | 44.9 |
| - Hunter (Newcastle) | - 9.5 | |
| - Central West | - 22.2 | |
| - Central Coast (Gosford) | - 4.8 | |
| - Riverina (Wagga) | - 11.1 | |
| - Illawarra (Wollongong) | - 6.3 | |
| - Coffs Harbour | - 4.8 | |
| - Other | - 6.3 | |
| Company size | <i>n</i> =63 | <i>n</i> =194 ¹ |
| Small (< 20 employees) | 44.4 | 37.1 |
| Larger (>20 employees) | 55.6 | 62.9 |
| Transport task | <i>n</i> =63 | <i>n</i> =194 ¹ |
| Main business | 49.2 | 66.5 |
| Ancillary | 50.8 | 33.5 |
| Type of transport business | <i>n</i> =31 | |
| Road freight operator | 61.3 | |
| Freight forwarder | 16.1 | |
| Other | 22.6 | |

Table 4 (continued): Demographic characteristics of company representatives

| | Companies % | Drivers % |
|------------------------------------|------------------------|----------------------|
| <i>Area covered by work</i> | <i>n=63</i> | <i>n=311</i> |
| within 50km radius of base | 47.6 | |
| within 100km radius of base | 36.5 | 82.0 |
| greater than 100km radius of base | 15.9 | 18.0 |

¹ Based on employee drivers only

Compared to the driver sample, the company representatives were more likely to come from regional areas, were more likely to represent smaller companies and more likely to be from companies where transport was the main business. Companies and drivers did not differ on the size of the area their work usually covered.

The sample of companies represented a wide range of different freight tasks (see Table 5), with the largest proportion carrying food-related products, and significant proportions doing particular types of transport work including courier and taxi truck work and express freight. Different types of companies did different freight jobs. For companies that did courier, taxi truck and express work this was their main business, whereas for light trucking companies carrying food, this activity was an ancillary aspect of their business. There were a few differences in the distribution of work sector between company and driver samples. The company sample was more likely to contain representatives from refrigerated, perishable food and grocery transport and drivers were more likely to come from courier and taxi truck and express sectors, however, for all other sectors, the two groups were quite similar.

Table 5: The usual freight tasks for all companies and for companies where transport is their main or ancillary part of the business

| Freight task ¹ | All companies | All companies | | | All drivers |
|---------------------------|---------------|-----------------------------------|------------------|---------------------------------|--------------|
| | | <i>Transport task for company</i> | | | |
| | | <i>Main business</i> | <i>Ancillary</i> | <i>Statistical test results</i> | |
| | <i>n=63</i> | <i>n=31</i> | <i>n=32</i> | | <i>n=321</i> |
| | % | % | % | χ ² | % |
| Courier & taxi truck | 20.6 | 41.9 | 0.0 | p<0.001 | 32.7 |
| Express | 23.8 | 48.4 | 0.0 | p<0.001 | 30.2 |
| Refrigerated | 28.6 | 3.2 | 53.1 | p<0.001 | 11.8 |
| Perishable food | 23.8 | 6.5 | 40.6 | p=0.001 | 7.5 |
| Groceries | 20.6 | 6.5 | 34.4 | p=0.006 | 2.8 |
| Removals | 7.9 | 16.1 | 0.0 | p=0.024 (Fe) | 9.0 |
| Waste | 7.9 | 9.7 | 6.3 | ns (Fe) | 5.0 |
| Machinery | 3.2 | 6.5 | 0.0 | ns (Fe) | 6.9 |
| Building materials | 19.0 | 6.5 | 31.3 | p=0.012 | 20.2 |
| Manufactured goods | 7.9 | 12.9 | 3.1 | ns (Fe) | 10.9 |
| General/mixed freight | 20.6 | 41.9 | 0.0 | p<0.001 | 23.1 |
| Bulk | 9.5 | 3.2 | 15.6 | ns (Fe) | 4.0 |
| Dangerous materials | 14.3 | 19.4 | 9.4 | ns (Fe) | 12.8 |
| Other | 9.5 | 6.5 | 12.5 | ns (Fe) | 9.0 |

¹ Multiple responses were allowed so some percentages do not sum to 100

As shown in Table 6, the majority of company representatives reported that their company used employee drivers (82.5%) with just under half reporting using part time or casual employees (46.0%) and around one-third using subcontract drivers (34.9%). About two-thirds of companies had only employees, around 25 percent used both employees and subcontractors and just less than 10 percent used only subcontractors. Most of the companies with employee drivers were small, with half employing five drivers or fewer and less than one-quarter employing more than 10 drivers. The companies that used subcontractor drivers tended to use comparatively few subcontractors. While the mean number of subcontractor firms used was around 26, half of the companies used no more than seven subcontracting firms indicating that only a small number of light transport companies use a large number of subcontracting firms.

Table 6: Employment characteristics for companies participating in the survey

| Type of drivers | Characteristic | | | |
|-------------------------|-------------------------------|-----------|--------|-------------|
| Employee drivers | Full time | Mean (SD) | (n=52) | 12.3 (28.4) |
| | | Median | | 5.0 |
| | | Range | | 1-197 |
| | Part time or casual | Mean (SD) | (n=29) | 3.4 (3.7) |
| | | Median | | 2.0 |
| | | Range | | 1-18 |
| | Total | Mean (SD) | (n=57) | 13.0 (27.2) |
| | | Median | | 6.0 |
| | | Range | | 1-197 |
| Subcontractors | Number of firms used | Mean (SD) | (n=22) | 26.2 (42.2) |
| | | Median | | 8.5 |
| | | Range | | 1-150 |
| | Number of subcontract drivers | Mean (SD) | (n=22) | 28.2 (44.7) |
| | | Median | | 11.0 |
| | | Range | | 1-170 |

The company representatives reported that employees were mainly paid by the hour, were paid overtime, and were paid the same for driving and non-driving work (see Table 7). In contrast, the reported payment structures for subcontractors varied quite widely, including a small percentage who were reported to be paid on a piece-rate basis. Company representatives were also more likely to report that their subcontractors were paid at different rates for driving and non-driving work although overall company representatives' estimates of the gross annual income were higher for their subcontractors compared to their employee drivers.

Comparing company representatives and drivers views of driver remuneration, very similar percentages were paid hourly or flat rates, but more subcontractor drivers reported being paid by piece rate type payment in the form of per item, delivery, load, per km or per tonne. Slightly fewer subcontractor drivers reported being paid overtime than the company reports of subcontractor payment. Overall, driver reports of their gross income were higher than estimates of company representatives, especially for subcontractors.

Table 7: Payment structure for employees and subcontractors reported by companies and drivers participating in the survey

| <i>Payment characteristics</i> | Company representatives (%) | | Drivers (%) | |
|-------------------------------------|------------------------------------|----------------------|--------------------|----------------------|
| | <i>Employee</i> | <i>Subcontractor</i> | <i>Employee</i> | <i>Subcontractor</i> |
| Payment type: | (n=57) | (n=22) | (n=191) | (n=89) |
| Hourly rate | 75.4 | 31.8 | 75.4 | 38.2 |
| Flat rate per day/week | 24.6 | 22.7 | 21.0 | 11.2 |
| Rate per item/delivery/load | 0.0 | 13.6 | 0 | 33.7 |
| Other (mainly multiple forms) | 0.0 | 31.8 | 3.7 | 16.9 |
| Paid same for driving & non-driving | 94.7 | 68.2 | - | - |
| Paid overtime | (n=56) | (n=10) | (n=173) | (n=39) |
| | 78.6 | 50.0 | 83.2 | 43.6 |
| Gross annual income | (n=54) | (n=15) | (n=184) | (n=85) |
| \$20,000 - \$34,999 | 33.3 | 6.7 | 22.8 | 8.2 |
| \$35,000 - \$49,999 | 59.3 | 20.0 | 46.7 | 24.7 |
| \$50,000 - \$64,999 | 7.4 | 46.7 | 25.5 | 23.5 |
| \$65,000 + | 0.0 | 26.7 | 2.2 | 42.3 |

Analysis of the usual working hours for drivers reported by company representatives showed that light truck drivers did an overall mean of 45 hours work each week, although the range was very broad (see Table 8). For nearly half of these companies the overall weekly hours included overtime of around 8 hours per week. The larger majority of companies reported that their drivers worked five days per week. All companies had day shift drivers but few had any other shift arrangements. Only three companies had permanent afternoon shifts, four had permanent night shifts and three used rotating shifts.

Drivers from the Sydney region were reported to do significantly more hours per day and per week and to do more overtime hours than drivers from regional areas. Drivers working in companies where transport was the main business were also reported to do longer daily and weekly hours and longer weekly overtime hours than drivers working for companies where transport was an ancillary part of the business. Comparing company representatives and drivers reports of total work hours per day and per week showed that they were quite similar. Driver estimates of paid overtime hours were slightly higher than those of the company representatives.

Table 8: Drivers' usual working hours for companies in Sydney or regional areas and for companies with transport as their main or ancillary business

| | All companies | Geographical base | | | Transport task | | | All drivers |
|--------------------------------------|---------------|-------------------|--------------|-------------------------|----------------|--------------|-------------------------|---------------|
| | | Sydney | Regional | Statistical test result | Main business | Ancillary | Statistical test result | |
| Total work hours ¹ | | | | | | | | |
| Per day | <i>n</i> =63 | <i>n</i> =22 | <i>n</i> =41 | | <i>n</i> =31 | <i>n</i> =32 | | <i>n</i> =309 |
| Mean (SD) | 9.0 (1.3) | 9.6 (1.4) | 8.6 (1.0) | M-W | 9.6 (1.0) | 8.5 (1.3) | t | 9.8 (1.9) |
| Median | 9.0 | 9.6 | 8.5 | p<0.001 | 9.5 | 8.5 | p=0.002 | 10.0 |
| Range | 5.0-12.0 | 5.0-12.0 | 7.0-11.0 | | 7.5-11.5 | 5.0-12.0 | | 3.0-17.5 |
| Per week | <i>n</i> =62 | <i>n</i> =22 | <i>n</i> =40 | | <i>n</i> =30 | <i>n</i> =32 | | <i>n</i> =311 |
| Mean (SD) | 45.3 (7.0) | 49.3 (8.0) | 43.1 (5.2) | M-W | 47.6 (5.8) | 43.1 (7.3) | M-W | 49.5 (10.6) |
| Median | 45.0 | 49.5 | 42.5 | p<0.001 | 47.5 | 41.8 | p=0.001 | 50.0 |
| Range | 28.0-72.0 | 28.0-72.0 | 33.0-60.0 | | 33.0-60.0 | 28.0-72.0 | | 10.0-75.0 |
| Total overtime hours | | | | | | | | |
| Per day ² | <i>n</i> =28 | <i>n</i> =10 | <i>n</i> =18 | | <i>n</i> =15 | <i>n</i> =13 | | |
| Mean (SD) | 1.8 (0.9) | 2.2 (0.7) | 1.5 (0.9) | M-W | 1.9 (0.9) | 1.6 (0.9) | t | |
| Median | 1.5 | 2.0 | 1.0 | p=0.024 | 1.8 | 1.0 | ns | |
| Range | 0.5-4.0 | 1.0-3.5 | 0.5-4.0 | | 7.0-4.0 | 0.5-3.5 | | |
| Per week ² | <i>n</i> =38 | <i>n</i> =12 | <i>n</i> =26 | | <i>n</i> =17 | <i>n</i> =21 | | |
| Mean (SD) | 7.9 (4.8) | 11.7 (4.9) | 6.2 (3.7) | M-W | 9.4 (3.8) | 6.7 (5.2) | M-W | |
| Median | 6.5 | 11.0 | 5.0 | p=0.001 | 8.8 | 5.0 | p=0.023 | |
| Range | 1.0-21.0 | 5.0-21.0 | 1.0-15.0 | | 4.5-17.0 | 1.0-21.0 | | |

X² = Chi square test; t = independent samples t-test; M-W = Mann Whitney test; ns = not significant (p>0.05);

¹ Includes overtime; ² Data on paid overtime only include companies who reported that they paid an overtime rate.

Most company representatives reported that their drivers did around 800 kilometres per week (see Table 9). Although there was considerable variation between companies, the average distance traveled each week did not differ by geographical location (Sydney and regional companies) nor by the nature of the transport task (main business or ancillary). Most companies reported that their drivers had two breaks in each shift and this was the same for companies in the Sydney or regional areas and for companies with transport as main or ancillary components of their business. Although on average drivers were reported to spend around 48 minutes in break time each day,

drivers from regional companies were reported to spend significantly longer in breaks than those working for companies from the Sydney region. Comparison of company and driver reports of the distances traveled each week showed very little difference. Drivers reported fewer breaks in each work shift and shorter overall time spent in breaks than company representatives.

Table 9: Distance covered by drivers from all participating companies, for companies in the Sydney or regional areas and for companies with transport as their main or ancillary business

| | All companies | Geographical base | | | Transport task | | | All drivers |
|-----------------------------------|---------------|-------------------|-------------|-------------------------|----------------|-------------|-------------------------|--------------|
| | | Sydney | Regional | Statistical test result | Main business | Ancillary | Statistical test result | |
| <i>Km per week¹</i> | <i>n=61</i> | <i>n=21</i> | <i>n=40</i> | | <i>n=30</i> | <i>n=31</i> | | |
| Mean (SD) | 829 (559) | 709 (277) | 892 (656) | M-W | 809 (541) | 848 (585) | M-W | 846 (549) |
| Median | 700 | 700 | 625 | ns | 665 | 700 | ns | 750 |
| Range | 150-3000 | 250-1500 | 150-3000 | | 150-2000 | 200-3000 | | 50-3500 |
| <i>Number of Breaks per shift</i> | <i>n=59</i> | <i>n=20</i> | <i>n=39</i> | | <i>n=29</i> | <i>n=30</i> | | |
| | % | % | % | X ² | % | % | X ² | % |
| 0 | 0 | 0 | 0 | ns | 0 | 0 | | 16.4 |
| 1 | 32.2 | 40.0 | 28.2 | | 37.9 | 26.7 | ns | 57.9 |
| 2 | 50.8 | 50.0 | 51.3 | | 37.9 | 63.3 | | 25.7 |
| More than 2 | 16.9 | 10.0 | 20.5 | | 24.1 | 10.0 | | |
| Total minutes in breaks | <i>n=58</i> | <i>n=19</i> | <i>n=39</i> | | <i>n=29</i> | <i>n=29</i> | | <i>n=254</i> |
| Mean (SD) | 48.8 (21.9) | 39.5 (15.4) | 53.3 (23.3) | t | 48.6 (24.0) | 49.0 (20.0) | M-W | 40.7 (27.9) |
| Median | 45.0 | 30.0 | 60.0 | p=0.022 | 45.0 | 45.0 | ns | 30.0 |
| Range | 15-120 | 15-60 | 15-120 | | 15-120 | 20-90 | | 5-200 |

X² = Chi square test; t = independent samples t-test; M-W = Mann Whitney test; Fe = Fisher's Exact test; ns = not significant (p>0.05)

¹ Km per week were averages of the km for short and long distance work in any vehicle size

Overall, company representatives reported that their drivers spent just over half of their work time driving (see Table 10). Companies located in Sydney reported that their drivers drove for a larger percentage of their work time compared to those located in regional areas. All companies, however, reported that light truck drivers do a range of other activities in addition to driving. Almost all companies reported that their drivers spent time loading

and unloading, accounting for around 20 percent of the drivers' work time. Regional companies reported that their drivers spent longer on loading-related activities compared to drivers for companies in the Sydney area. Just over half of the companies also reported that drivers spent time on sorting, picking and packing loads, accounting again for around 20 percent of their time. Most companies also reported that their drivers spent time on waiting, administration and other non-driving activities, although these activities were estimated to account for the smallest amount of drivers work time.

Driver and company representative reports of the time spent in different work tasks during each shift were very similar in terms of the percentage of drivers who do the work task and the relative amount of time spent doing each task.

Table 10: Drivers' work tasks for all companies and for drivers from Sydney-based and regional companies

| Work task | All companies | Geographical base | | | Statistical test result | All Drivers |
|------------------------------------|---------------|-------------------|-------------|----------------|-------------------------|-------------|
| | | Sydney | Regional | | | |
| <i>Drive</i> | <i>n=62</i> | <i>n=22</i> | <i>n=40</i> | | <i>n=244</i> | |
| % time of shift | | | | | | |
| Mean (SD) | 54.4 (18.0) | 60.9 (11.1) | 50.9 (20.2) | M-W | 54.3 (21.4) | |
| Median | 60.0 | 60.0 | 50.0 | p=0.04 | 54.7 | |
| Range | 12.0-90.0 | 30.0-80.0 | 12.0-90.0 | | 7.6-100.0 | |
| <i>Sort, pick, pack loads</i> | <i>n=62</i> | <i>n=22</i> | <i>n=40</i> | | <i>n=244</i> | |
| % | % | % | % | X ² | % | |
| % who do it | 61.3 | 59.1 | 62.5 | ns | 66.4 | |
| % time of shift | <i>n=38</i> | <i>n=13</i> | <i>n=25</i> | | <i>n=162</i> | |
| Mean (SD) | 19.1 (13.3) | 14.8 (9.2) | 21.3 (14.7) | t | 20.3 (13.2) | |
| Median | 17.5 | 10.0 | 20.0 | ns | 18.5 | |
| Range | 2.0-53.0 | 5.0-33.0 | 2.0-53.0 | | 0.7-81.8 | |
| <i>Load and unload</i> | <i>n=62</i> | <i>n=22</i> | <i>n=40</i> | | <i>n=244</i> | |
| % | % | % | % | Fe | % | |
| % who do it | 93.5 | 100.0 | 90.0 | ns | 89.8 | |
| % time of shift | <i>n=58</i> | <i>n=22</i> | <i>n=36</i> | | <i>n=219</i> | |
| Mean (SD) | 22.4 (15.4) | 16.3 (8.7) | 26.1 (17.4) | M-W | 21.8 (14.9) | |
| Median | 20.0 | 15.0 | 20.0 | p=0.028 | 19.0 | |
| Range | 5.0-75.0 | 5.0-40.0 | 5.0-75.0 | | 0.7-87.5 | |
| <i>Wait, administration, other</i> | <i>n=62</i> | <i>n=22</i> | <i>n=40</i> | | <i>n=244</i> | |
| % | % | % | % | Fe | % | |
| % who do it | 93.5 | 90.9 | 95.0 | ns | 87.3 | |
| % time of shift | <i>n=58</i> | <i>n=20</i> | <i>n=38</i> | | <i>n=213</i> | |
| Mean (SD) | 13.8 (9.6) | 15.4 (7.8) | 13.0 (10.4) | M-W | 14.5 (10.6) | |
| Median | 10.5 | 15.0 | 10.0 | ns | 11.8 | |
| Range | 1.0-40.0 | 2.0-30.0 | 1.0-40.0 | | 1.2-66.7 | |

X² = Chi square test; t = independent samples t-test; M-W = Mann Whitney test; Fe = Fisher's Exact test; ns = not significant (p>0.05)

Companies reported an average of around 35 stops by drivers in each work period, although the number of stops depended on the role of transport in the company (see Table 11). Transport only company drivers were reported to do more stops than drivers for companies where transport was an ancillary part of the business. Almost all companies reported doing depot to door deliveries (85.7%), whereas comparatively few reported doing door to door (33.3%), door to depot (33.3%) or depot to depot work (15.9%). The overall number of stops estimated by company representatives was very similar to that reported by drivers and the types of stops were also similar, with the exception of a somewhat higher percentage of door to depot type stops in the driver sample.

While most companies reported that their drivers' work was predictable for all or most of the time (53.9%), a notable minority of companies reported that their drivers' work was never predictable (31.7%). The predictability of work ranged between most predictable daily customers and regular customers to once-only customers (see Table 11). Transport only companies were more likely to have daily customers and more of their work involved daily customers compared to companies where transport was an ancillary aspect of the business. Nevertheless, significantly fewer ancillary transport businesses reported having once-only customers and a greater percentage of work for ancillary transport companies involved regular customers. Sydney-based companies were also slightly more likely to have daily customers and to have once-only customers than regional companies which tended to spend more time doing work for regular customers. Overall, company representatives' reports of the predictability of work were very similar to those of drivers.

Around forty percent of companies reported that drivers worked to a fixed time schedule most or all of the time, although nearly one-third reported that their drivers never had a fixed time schedule. The time schedule was more likely to be set by the company rather than customer or driver and although more than one-third of companies reported monitoring arrival times (39.7%), only one company reported penalties for drivers for being late. Compared to driver reports, company representatives made lower estimates of the amount of time the driver schedules were fixed and of the amount of time the drivers set the schedule. More than half of the drivers reported that their time schedule was regularly fixed (53.4%) and nearly one-third of them reported that they set the time schedule (31.9%). This is clearly one aspect where companies and drivers may have different perceptions of the situation.

Table 11: Number of stops in each shift and predictability of work for all companies, Sydney and regional-based companies and companies with transport as their main or ancillary task

| | All companies | Geographical base | | | Transport task | | | All Drivers |
|------------------------------|-----------------|-------------------|-----------------|-------------------------|-----------------|-----------------|-------------------------|------------------|
| | | Sydney | Regional | Statistical test result | Main business | Ancillary | Statistical test result | |
| Total Stops per shift | <i>n</i> =63 | <i>n</i> =22 | <i>n</i> =41 | | <i>n</i> =31 | <i>n</i> =32 | | |
| Mean (SD) | 34.8 (37.2) | 27.6 (14.9) | 38.7 (44.5) | M-W | 45.3 (48.2) | 24.7 (17.3) | M-W | 34.4 (30.5) |
| Median, Range | 30.0, 1-250 | 23.0, 7-60 | 30.0, 1-250 | ns | 44.0, 1-250 | 21.3, 2.5-80.0 | p=0.026 | 26, 1-200 |
| Types of stops | | | | | | | | |
| Depot to door | 85.7 | | | | | | | 78.9 |
| Door to door | 33.3 | | | | | | | 31.8 |
| Door to depot | 33.3 | | | | | | | 49.7 |
| Depot to depot | 15.9 | | | | | | | 18.1 |
| Predictability | | | | | | | | |
| Daily customers | <i>n</i> =62, % | <i>n</i> =22, % | <i>n</i> =40, % | | <i>n</i> =30, % | <i>n</i> =32, % | | <i>n</i> =308, % |
| % with these customers | 61.3 | 72.7 | 55.0 | ns (p=0.08) | 76.7 | 46.9 | p=0.016 | 65.9 |
| % of work | <i>n</i> =38 | <i>n</i> =16 | <i>n</i> =22 | | <i>n</i> =23 | <i>n</i> =15 | | <i>n</i> =209 |
| Mean (SD) | 45.9 (24.9) | 48.3 (24.1) | 44.2 (25.8) | t | 51.9 (21.5) | 36.8 (27.5) | t | 42.1 (26.6) |
| Median, Range | 44.5, 10-90 | 45.0, 15-90 | 44.5, 10-90 | ns | 21.5, 20-90 | 30.0, 10-90 | ns (p=0.066) | 45, 4-100 |
| Regular customers | <i>n</i> =63, % | <i>n</i> =22, % | <i>n</i> =41, % | | <i>n</i> =31, % | <i>n</i> =32, % | | <i>n</i> =309, % |
| % with these customers | 96.8 | 100.0 | 95.1 | ns | 96.8 | 96.9 | ns | 93.2 |
| % of work | <i>n</i> =61 | <i>n</i> =22 | <i>n</i> =39 | | <i>n</i> =30 | <i>n</i> =31 | | <i>n</i> =288, |
| Mean (SD) | 61.1 (30.5) | 51.9 (30.5) | 66.3 (29.6) | t | 42.9 (23.4) | 78.7 (26.0) | M-W | 60.4 (28.8) |
| Median, Range | 65.0, 5-100 | 49.5, 5-100 | 70.0, 9-100 | ns (p=0.075) | 40.0, 5-100 | 90.0, 10-100 | p<0.001 | 60, 1-100 |
| Once-only customers | <i>n</i> =63, % | <i>n</i> =22, % | <i>n</i> =41, % | | <i>n</i> =31, % | <i>n</i> =32, % | | <i>n</i> =307, % |
| % with these customers | 73.0 | 90.9 | 63.4 | p=0.019 | 90.3 | 56.2 | p=0.002 | 73.6 |
| % of work | <i>n</i> =46 | <i>n</i> =20 | <i>n</i> =26 | | <i>n</i> =28 | <i>n</i> =18 | | <i>n</i> =226 |
| Mean (SD) | 17.6 (21.7) | 14.3 (16.0) | 20.0 (25.2) | M-W | 22.1 (25.7) | 10.5 (10.2) | M-W | 21.9 (25.9) |
| Median, Range | 10.0, 1-100 | 10.0, 1-60 | 10.0, 1-100 | ns | 10.0, 1-100 | 7.5, 1-35 | ns | 10, 1-100 |

t = independent samples t-test; M-W = Mann Whitney test; ns = not significant (p>0.05)

3.1 COMPANY ATTITUDES TO FATIGUE AND FATIGUE MANAGEMENT

Company representatives reported that fatigue was a minor problem at worst for the light transport drivers (see Table 12). None of the representatives reported it as a major or substantial problem. In contrast, a significant minority of them reported that fatigue was a substantial or major problem for the industry. Drivers showed a different pattern of responding as they were much more likely to report that fatigue is a substantial or major problem for the drivers.

Table 12: Reports of fatigue as a problem for the industry and for individual drivers by company representatives and drivers

| Fatigue is a problem | Company representatives n=63 | Drivers n=317 |
|------------------------------|------------------------------------|------------------|
| <i>In industry sector</i> | % | % |
| No | 23.8 | 13.2 |
| Minor | 55.6 | 47.6 |
| Substantial | 15.9 | 26.5 |
| Major | 4.8 | 12.5 |
| <i>For driver personally</i> | | |
| No | 36.5 | 21.8 |
| Minor | 63.5 | 51.1 |
| Substantial | 0 | 19.6 |
| Major | 0 | 7.6 |

Company representatives were asked to indicate which of a list of factors they thought might contribute to driver fatigue. They tended to cite non-work-related factors as the major contributors to fatigue for drivers (see Table 13). Too little pre-work sleep, the after-effects of stay awake drugs and use of alcohol, insufficient night sleep, poor and irregular eating and family problems were cited as major or substantial contributors by about three-quarters or more of company representatives. The only work-related contributor cited by most of the representatives was long driving hours. In fact most of the work-related potential contributors were viewed as having no or only a minor contribution to fatigue, including new pickup or delivery locations, early afternoon driving, loading and unloading, too much non-driving work and waiting to load/unload. These views did not differ for Sydney or regional companies. Transport only and ancillary transport companies differed in their views of some of the contributors to fatigue. Representatives from ancillary transport companies were significantly more likely to view insufficient night sleep and dusk driving as substantial or major contributors to driver fatigue.

Table 13: Company representatives' perceptions of the contributors to driver fatigue

| Contributing factors | Substantial or major contributor | | | Statistical test result |
|-------------------------------|----------------------------------|-----------------|-------------|-------------------------|
| | All companies % | Main business % | Ancillary % | |
| | n=63 | n=31 | n=32 | X ² |
| Long driving hours | 85.8 | 90.3 | 81.3 | ns (Fe) |
| Insufficient night sleep | 77.8 | 64.5 | 90.6 | p=0.013 |
| Too little pre-work sleep | 87.3 | 83.9 | 90.6 | ns (Fe) |
| Insufficient rest breaks | 69.3 | 64.5 | 74.2 | ns |
| Poor road conditions | 52.4 | 48.4 | 56.3 | ns |
| Monotonous driving route | 47.6 | 35.5 | 59.4 | ns (p=0.058) |
| Heavy city traffic | 61.9 | 61.3 | 62.5 | ns |
| Loading/unloading | 16.1 | 16.7 | 15.6 | ns |
| Early afternoon driving | 14.3 | 35.5 | 59.4 | ns (p=0.058) |
| Heavy highway traffic | 50.8 | 38.7 | 62.5 | ns (p=0.059) |
| Poor weather conditions | 58.7 | 48.4 | 68.8 | ns |
| Poor diet/irregular eating | 76.2 | 74.2 | 78.1 | ns |
| Poor vehicle ventilation | 54.0 | 48.4 | 59.4 | ns |
| Waiting to load/unload | 31.7 | 29.0 | 34.4 | ns |
| Dusk driving | 43.6 | 29.0 | 58.1 | p=0.021 |
| Vehicle vibration | 34.9 | 29.0 | 40.6 | ns |
| Too much non-driving work | 17.5 | 19.4 | 15.6 | ns |
| Family problems | 73.0 | 71.0 | 75.0 | ns |
| Poor cab design | 40.4 | 38.7 | 41.9 | ns |
| Dawn driving | 54.8 | 58.1 | 51.6 | ns |
| Night driving | 51.6 | 41.9 | 61.3 | ns |
| Use of alcohol | 79.4 | 71.0 | 87.5 | ns |
| New delivery/pickup location | 4.8 | 9.7 | 0.0 | ns (Fe) |
| Stay-awake drug after effects | 83.4 | 80.0 | 86.7 | ns |
| Other | 92.8 | | | |

Company representatives and drivers were asked slightly different questions about the contributors to fatigue. As they are not professional drivers (although some of them may have been in the past) company representatives were asked to make judgments about the extent that a range of different factors contributed to driver fatigue. Drivers were asked to report which of the same list of factors contributed to their fatigue while driving and which were most important contributors. While clearly the two groups are not responding to these questions based on the same experiences, any differences in the judgments of the factors that contribute to fatigue signify a mismatch in the perceptions of the two groups about which factors are most important for causing fatigue and consequently which should be avoided in order to manage it.

The results demonstrated some similarities between company representatives' and drivers perceptions of the contributors to fatigue, but also some notable differences (see Table 14). For both groups, too little pre-work sleep, long driving hours and insufficient night sleep were most commonly reported as important contributors to fatigue. Company representatives were also most likely to report that use of alcohol

and the after-effects of stay awake drugs would contribute significantly to fatigue. In contrast, hardly any drivers reported stay-awake drugs and alcohol use as important contributors to their fatigue experiences. Company representatives and drivers also differed in their ratings of the contribution of loading and unloading activities and early afternoon driving to fatigue. Many drivers rated these factors as important contributors whereas very few company representatives did so.

Table 14: Comparison of the top 5 and bottom 5 contributors to fatigue as judged by company representatives and drivers

| Top 5 Contributors to fatigue (max=24) | | | | | |
|--|-------------------------------------|----------------------------|-----------------------------------|------------------------------|----------|
| Top 5 for Company representatives | | | Top 5 for Drivers | | |
| | Company %, rank | Drivers %, Rank | | Company %, Rank | |
| Too little pre-work sleep | 87.3, 1 | 54.0, 3 | Long driving hours | 58.1, 1 | 85.8, 2 |
| Long driving hours | 85.8, 2 | 58.1, 1 | Insufficient night sleep | 57.3, 2 | 77.8, 5 |
| Stay awake drug after-effects | 83.4, 3 | 6.1, 24 | Too little pre-work sleep | 54.0, 3 | 87.3, 1 |
| Use of alcohol | 79.4, 4 | 15.2, 22 | Insufficient rest breaks | 47.5, 4 | 69.3, 8 |
| Insufficient night sleep | 77.8, 5 | 57.3, 2 | Poor road conditions | 43.0, 5 | 52.4, 12 |
| Bottom 5 Contributors to fatigue (max=24) | | | | | |
| Bottom 5 for Company representatives | | | Bottom 5 for Drivers | | |
| | %, Rank Company reps | %, Rank Drivers | | %, Rank Companies | |
| New delivery/pick up arrangements | 4.8, 24 | 12.3, 23 | Stay awake drug after-effects | 6.1, 24 | 83.4, 3 |
| Early afternoon driving | 14.3, 23 | 35.5, 9 | New delivery/pick up arrangements | 12.3, 23 | 4.8, 24 |
| Loading/unloading (%) | 16.1, 22 | 38.2, 8 | Use of alcohol | 15.2, 22 | 79.4, 4 |
| Too much non-driving work | 17.5, 21 | 23.1, 17 | Driving at night | 16.3, 21 | 51.6, 14 |
| Waiting to load/unload | 31.7, 20 | 26.1, 14 | Driving at dawn | 19.3, 20 | 54.8, 11 |

Company representatives were quite aware of the comparative helpfulness of a range of potential fatigue management strategies (see Table 15). Most acknowledged that stopping to rest or nap were very helpful strategies, that caffeinated drinks, ventilation and listening to music or radio were less helpful and that smoking, eating while driving and non-caffeinated drinks were unhelpful. Interestingly, the majority of company representatives rated stay-awake drugs as unhelpful.

Table 15: Company representatives' ratings of helpfulness of strategies for fatigue management

| | | Very unhelpful | Unhelpful | Helpful | Very helpful |
|------------------------------|--------|-------------------|-----------|---------|-----------------|
| Management strategies | | % | % | % | % |
| Stop to eat | (n=63) | 6.3 | 6.3 | 52.4 | 34.9 |
| Stop to rest | (n=63) | 0.0 | 1.6 | 28.6 | 69.8 |
| Stop to nap | (n=63) | 0.0 | 12.7 | 31.7 | 55.6 |
| Eat while driving | (n=62) | 19.4 | 59.7 | 19.4 | 1.6 |
| Caffeinated drinks | (n=61) | 3.3 | 26.2 | 63.9 | 6.6 |
| Non-caffeine drinks | (n=63) | 3.2 | 47.6 | 44.4 | 4.8 |
| Smoking | (n=61) | 16.4 | 70.5 | 9.8 | 3.3 |
| Stay-awake drugs | (n=61) | 37.7 | 34.4 | 13.1 | 14.8 |
| Listen to music/radio | (n=63) | 3.2 | 27.0 | 65.1 | 4.8 |
| Adjust ventilation | (n=63) | 0.0 | 14.3 | 69.8 | 15.9 |
| Other | (n=22) | 0.0 | 0.0 | 27.3 | 72.7 |

There was very little difference between company representatives and drivers in their judgments about the most helpful strategies for managing fatigue (see Table 16). The largest percentages of respondents from both groups reported stopping to rest, nap or eat as most helpful. Adjusting ventilation and use of stay-awake drugs were also acknowledged as very helpful by smaller, but notable percentages of both groups. It should be noted, however, that company representatives attitudes towards the strategic use of stay-awake drugs was quite controversial since while it was one of the strategies judged as most helpful by the largest number of representatives, an even larger percentage judged it as very unhelpful. For drivers too, while many drivers judged it as one of the most helpful strategies, very few drivers reported using it at all.

Table 16: Strategies reported as most helpful for managing fatigue by company representatives and drivers

| Top strategies judged most helpful for managing fatigue | |
|--|----------------------------|
| Company representatives | Drivers |
| (% of users) | (% of users) |
| Stop to rest (69.8%) | Stop to nap (46.9%) |
| Stop to nap (55.6%) | Stop to rest (44.3%) |
| Stop to eat (34.9%) | Stop to eat (38.1%) |
| Adjust ventilation (15.9%) | Music/radio (36.1%) |
| Stay-awake drugs (14.8%) | Adjust ventilation (28.6%) |
| | Stay-awake drugs (28.6%) |

Comparatively few companies reported having a formal policy for management of fatigue for either employee or subcontract drivers (26.3% and 22.7% respectively). Considerably fewer drivers reported that their company had a policy on fatigue management (15.6%), however more than one-third of drivers did not know whether or not their company had a policy.

More companies reported monitoring employee drivers, (43.9%) than subcontractors (31.8%). The main methods reported for monitoring fatigue were observing drivers (79.3%), asking them about their fatigue (72.4%) or reviewing workload records (72.4%) and less commonly reviewing accident and incident records (31.0%). The most common fatigue management practices reported by companies (see Table 17) were active strategies relating to monitoring of workloads, schedules and driving hours. Also common were practices that focused on organisational adaptability including flexible schedules, using others for loading/unloading and rostering extra drivers at busy times.

Where companies restricted working hours, most restricted simply the total number of hours per shift (78.1%), with around one-third restricting them to no more than 10 hours (32.1%) or to between 10 and 12 hours (46.4%), although a significant minority of companies allowed between 12 and 16 hours per shift (21.5%). The time between shifts was a less common restriction (65.6%) and most companies imposed a period of at least 10 hours between shifts (81.0%), with the remainder imposing an 8 hour break between shifts. Of the relatively few companies that restricted hours per week (37.5%), most restricted to around 60 hours (41.2%), although approaching one-third imposed high limits of up to 72 hours (29.5%) and a similar percentage imposed low limits of between 36 and 50 hours (29.5%). Companies that restricted the number of consecutive shifts (34.4%) typically set the limit at five or six shifts.

Table 17: Fatigue management practices used by companies participating in survey

| <i>Fatigue management practices</i> | <i>(n=63)</i> | <i>%</i> |
|-------------------------------------|---------------|----------|
| Driver fatigue education | | 39.7 |
| Driver health education | | 38.1 |
| Monitor schedules | | 79.4 |
| Monitor workloads | | 84.1 |
| Monitor driving hours | | 71.4 |
| Restrict hours | | 41.3 |
| Minimise night driving ¹ | | 33.3 |
| Compulsory rest breaks | | 55.6 |
| Flexible schedules | | 69.8 |
| Allow napping | | 49.2 |
| Roster extra drivers at busy times | | 65.1 |
| Use others for loading & unloading | | 68.3 |
| Other | | 22.2 |

¹ Only 28.6% of companies did night shift

3.2 OCCUPATIONAL HEALTH AND SAFETY

Company representatives were asked about the frequency of exposure of drivers to potential hazards while at work. Most companies reported requiring hazard reports (92.1%) and in most cases these were recorded (71.9%). The number of hazard reports per year was relatively low, with half of companies having three or less in the past year, although the range was very broad. The rate of hazard reports in the last year across companies was 0.36 per driver and 0.66 per employee driver. When asked whether their drivers experienced a range of potential problems or hazards at work (see Table 18), the most common hazards reported by company representatives related to characteristics of the locations drivers were required to access, including poor goods access at customers premises, not enough loading zone parking, no nearby loading zone parking and dangerous actions by other road users. Hazards relating to repetitive movements were also reported by more than half of the company representatives. Hazards that many company representatives reported as never occurring were violence, lack of equipment for safe loading/unloading and insufficient staff to move goods safely.

Comparison of company representatives' views about the frequency of exposure to hazards at work for drivers and the drivers' reports showed the same basic order of the most frequently reported hazards. Company representatives were less likely to report very heavy traffic, stress, insufficient rest breaks and insufficient staff and equipment to move good safely compared to drivers. They were more likely, however to report repetitive movements as a frequent hazard compared to drivers, although for both groups, this was one of the more frequently reported hazards.

Table 18: Frequency of potential exposure to hazards at work

| Hazard | | All companies | | | All Drivers |
|---------------------------------------|--------|---------------|--------------------------|---------------------|---------------------|
| | | Never | Rarely/1-2 times a month | Once a week or more | Once a week or more |
| Dangerous actions by other road users | (n=61) | 0.0 | 29.5 | 70.5 | 75.6 |
| Not enough loading zone parking | (n=63) | 20.6 | 7.9 | 71.4 | 75.3 |
| Poor goods access at customers | (n=63) | 4.8 | 22.2 | 73.0 | 69.2 |
| Very heavy traffic | (n=63) | 4.8 | 44.4 | 50.8 | 63.2 |
| Repetitive movements | (n=63) | 14.3 | 17.5 | 68.3 | 56.9 |
| Stress | (n=61) | 9.8 | 55.7 | 34.4 | 49.7 |
| Docks not suited to goods or vehicle | (n=61) | 24.6 | 37.7 | 37.7 | 38.0 |
| Not enough rest breaks | (n=59) | 22.0 | 54.2 | 23.7 | 35.8 |
| Tight deadlines | (n=63) | 20.6 | 47.6 | 31.7 | 32.7 |
| Long working hours | (n=63) | 17.5 | 52.4 | 30.2 | 29.9 |
| Not enough staff to move goods safely | (n=63) | 33.3 | 50.8 | 15.9 | 26.2 |
| Lack of equipment for safe un/loading | (n=63) | 44.4 | 44.4 | 11.1 | 19.7 |
| Conflict with customers | (n=63) | 1.6 | 82.5 | 15.9 | 12.3 |
| Violence | (n=61) | 54.1 | 44.3 | 1.6 | 4.4 |
| Vehicle breakdown/mechanical failure | (n=63) | 3.2 | 95.2 | 1.6 | 2.0 |
| No nearby loading zone parking | (n=63) | 20.6 | 7.9 | 71.4 | n/a |

Relatively few companies had a formal medical policy for employees (19.3%) and hardly any had one for subcontractors (4.5%). A small percentage required a medical assessment on recruitment for employees (12.3%) or subcontractors (9.1%). The most common safety practices reported by companies were training in general regulations and practices, manual handling and providing personal protective equipment (see Table 19). Only around one-fifth of companies reported providing training in defensive or advanced driving, conflict management or negotiation skills or fatigue management. The main types of personal protective equipment provided were protective clothing, adjustable vehicle seats in all or some vehicles and all-weather gear. No smoking in vehicles was less common with only around two-thirds of companies reporting it for all vehicles and sun protection was provided for just over half of the drivers. Fewer than half of the companies reported conducting occupational health and safety site assessments of customers premises (42.0%), with most being prompted by driver complaints rather than being a scheduled activity (61.9%). Approaching two-thirds of companies reported having set procedures for handling hazard reports (65.5%).

Company representatives and drivers reported the same patterns for OHS training, with the exception of Hazardous substances training which was reported by a larger

percentage of drivers. Fewer drivers reported being provided with most types of personal protective equipment compared to reports by company representatives. The only exceptions were sun protection and vehicle air conditioning. Similarly, fewer drivers reported that their company did assessments of customers premises (34.9%), although where they were done, the majority of drivers agreed with company representatives that they were done in response to driver complaints (74.5%). Driver and company representatives' were also similar in reporting that their company had set procedures for handling hazard reports, although just over one-quarter of drivers reported 'don't know' to this question.

Table 19: Safety practices used by company representatives and drivers

| Safety practices | All companies | | All Drivers | | |
|--------------------------------------|-----------------------------------|------|-------------|-------|------|
| | n=63 | % | n=260 | % | |
| OHS training | General regulations and practices | 84.1 | | 80.0 | |
| | Manual handling | 82.5 | | 73.1 | |
| | Hazardous substances | 27.0 | | 50.0 | |
| | Fatigue management | 21.0 | | 22.7 | |
| | Conflict mgt/negotiation skills | 19.0 | | 19.2 | |
| | Defensive/advanced driving | 20.6 | | 18.1 | |
| | Stress mgt | 7.9 | | 11.5 | |
| | Other | 25.4 | | 0 | |
| Personal Protective Equipment | Protective clothing | n=63 | 92.1 | n=297 | 82.2 |
| | All-weather gear | n=62 | 83.9 | n=298 | 74.2 |
| | Sun protection | n=62 | 59.7 | n=297 | 54.2 |
| | Adjustable vehicle seats | n=53 | 84.9 | n=289 | 68.5 |
| | Vehicle air conditioning | n=53 | 50.9 | n=293 | 54.3 |
| | Vehicle no smoking policy | n=54 | 68.5 | n=287 | 46.7 |
| | Tinted windscreens | n=53 | 35.8 | n=293 | 24.9 |

The majority of companies recorded information about work-related injury including compensable (95.0%), lost time (88.3%) and non-lost time injury (85%), with slightly fewer companies recoding incidents without injury (75.0%). Most company representatives felt that drivers rarely or never failed to report injury (65.1%), but one-third reported that drivers sometimes or often fail to report injuries (33.3%) and most believed that failure to report occurred because the injury was minor (50.0%) rather than due to financial consequences (13.5%) or their fault or error (13.5%).

Across all companies surveyed, the mean injury rate was 0.45 per driver or 0.83 per employee driver. Companies reported that their most common type of driver injury was joint, muscle, ligament or tendon injuries (56.0%), the most common cited causes were lifting, twisting and other manual handling activities (54.0%) or slips, trips and falls (18.0%) and backs were the most commonly injured part of the body (44.4%).

This pattern of injury mirrored that reported by drivers, as the mean injury rate for the participating drivers was 0.41 per driver although this is likely to underestimate the

rate as drivers were only asked to report their most recent injury in the last year. Manual handling injury dominated the driver reports resulting in muscle, ligament tendon or joint injuries (44.5%) most commonly involving the back (46.3%).

Most companies reported having vehicle accidents at some stage in the last year (80.0%), corresponding to crash rates of 0.23 per driver or 0.43 per employee driver, with most resulting only in property damage. A small percentage of companies reported having a vehicle accident involving injury in the past year (16.7%) with 10 percent of companies having an accident in which their driver was injured.

Company representatives were asked about the most common safety problems their drivers encountered. As shown in Table 20, the problems reported most often related to road and driving, the physical work and problems of the depot or delivery site. Lifting and manual handling was by far the most cited problem, followed by dangerous site access then other drivers, vehicles and traffic and crashes. Driver state was not one of the major groups of issues cited by companies, but fatigue was certainly the most common driver-related problem mentioned.

While the overall order of the most frequently cited safety problems was the same for company representatives and drivers, there were a number of notable differences in the patterns of the reports from each group. Considerably fewer drivers reported safety problems relating to physical work and effects, especially lifting and manual handling. Drivers were less likely to report depot or site related issues, especially problems due to dangerous sites or access to them. Drivers reported different freight and loading issues to company representatives as approaching 10 percent of them reported poorly packed or dangerous freight whereas none of the company representatives mentioned this problem. Company representatives were less likely to report work organizational problems compared to drivers. This was particularly seen in the much lower percentage of reports of time pressures as a safety problem by company representatives.

Table 20: Safety problems reported by company representatives

| Safety problem | | All companies n=61 % | All Drivers n=264 % |
|----------------------------------|-----------------------------|----------------------------|---------------------------|
| Road and driving issues | <i>At least one of:</i> | 70.5 | 68.9 |
| | Other drivers/vehicles | 23.0 | 34.5 |
| | Traffic | 19.7 | 17.8 |
| | Crashes | 18.0 | 12.1 |
| | Road conditions | 13.1 | 9.1 |
| | Weather conditions | 9.8 | 7.2 |
| | Driving generally | 1.6 | 6.8 |
| | Other road/driving | 9.8 | 5.7 |
| Physical work and effects | <i>At least one of:</i> | 63.9 | 49.2 |
| | Lifting/manual handling | 49.2 | 32.2 |
| | Back injury | 11.5 | 11.4 |
| | Injury generally | 8.2 | 11.0 |
| | Substance exposures | 1.6 | 1.9 |
| | Other physical | 8.2 | 1.9 |
| Depot/site related issues | <i>At least one of:</i> | 57.4 | 40.9 |
| | Dangerous site or access | 27.9 | 9.8 |
| | Unloading/delivery dangers | 18.0 | 14.4 |
| | Safety at site/depot/yard | 9.8 | 11.4 |
| | Forklifts | 6.6 | 4.2 |
| | Other depot/site | 6.6 | 4.9 |
| Driver mental states | <i>At least one of:</i> | 21.3 | 21.6 |
| | Fatigue | 18.0 | 14.0 |
| | Concentration | 3.3 | 6.1 |
| | Stress | 3.3 | 3.0 |
| | Distraction | 1.6 | 1.1 |
| Freight or load issues | <i>At least one of:</i> | 13.1 | 9.8 |
| | Overloading or poor loading | 1.6 | 1.9 |
| | Other freight/load | 13.1 | 2.3 |
| Vehicle-related issues | <i>At least one of:</i> | 11.5 | 9.5 |
| | Climbing/falling from truck | 9.8 | 4.5 |
| | Maintenance problems | 1.6 | 3.4 |
| | Other vehicle-related | 1.6 | 1.9 |
| Work organisation | <i>At least one of:</i> | 4.9 | 13.3 |
| | Time pressure | 3.3 | 9.8 |
| | Other work organisation | 1.6 | 0.8 |
| Other | | 13.1 | 7.6 |

4 DISCUSSION

This study paints a picture of the work of light trucking from the point of view of people who play a management role in light trucking companies. Participating companies ranged widely across different freight tasks, company types, sizes and locations. We might therefore expect considerable diversity in the characteristics of the work across the industry, although the shared characteristics across companies would be of particular interest as they may reflect similar influences on light truck drivers and the industry. The results show that the majority of companies employ their own light truck drivers, mainly on a full time basis, although about half use part time or casual drivers as well. Subcontracted drivers, mainly single owner drivers, were used by around one-third of the companies. In most companies, drivers did around nine hours in a shift and around 45 hours in a week, but the longest shifts reported were 12 hours and the longest week was 72 hours each week, which means that drivers in some companies were doing the equivalent of the longest hours permitted for long distance drivers. Overtime was reported by nearly two-thirds of companies, corresponding to around 8 hours for each driver per week.

Most light truck work involves much more than just driving. The majority of companies reported that drivers spent just over half of their work time driving, and that the remainder of time was spent in loading and load-related activities. Only a small percentage of time was spent in waiting, administration and related activities for almost all companies. Companies reported that their drivers did an average of around 35 stops in a shift. A great deal of this work was predictable however since most companies reported that only a relatively small percentage of their work was for one-off customers. Most work was for regular or daily customers. The study by Hanowski, Wierwille, Garness and Dingus (2000) of light local and short haul operations in the USA also showed that these drivers spent a significant proportion of their time in activities other than driving although the drivers in their study spent even less time driving than found in the current study (around 28 percent). The US study only looked at drivers doing one type of transport task, carrying food and beverages which might be expected to involve much more time actually moving goods at customers, whereas transport tasks for companies in the current study were much more diverse.

Employment type is clearly an important differentiation within companies. Employees and subcontractors were remunerated differently in most companies that employed both. Employees were mainly paid by the hour or less frequently on a flat daily or weekly rate, were paid the same for all work and were paid overtime. The remuneration arrangements for subcontractors were more diverse and included more productivity-based pay arrangements such as per item or kilometer and fewer companies compensated them for non-driving work or overtime. Despite these differences, companies reported that their subcontractors' gross incomes were considerably higher overall than their employees. Driver reports of their gross incomes simply reinforced these findings. Subcontractor drivers also reported higher incomes than employee drivers although the difference between drivers was considerably larger than the company representatives' reports of payments for subcontractors and employees.

The difference in gross income for drivers employed under different arrangements suggests that in order to generate higher earnings, subcontractors do proportionately more work than employees. The higher use of productivity-based payments for subcontractors makes this possible and is likely to encourage subcontractors to do longer hours. This is also likely to increase the fatigue experiences of light truck drivers. Subcontracting light truck drivers therefore may be a higher risk subgroup for fatigue. Further work is needed to investigate the relationship between the amount of work, fatigue and subcontracting among light truck drivers.

This study provided an opportunity to examine whether and how the views of management differ from those of the drivers who actually do the light trucking work. This is important because it provides some validation of the perceptions of each group. Where perceptions differ these differences may provide useful indicators of potential problem areas in the relationship between company and driver. In drawing comparisons between drivers and companies however, it should be recognised that the two groups of respondents did not overlap entirely. For some companies, only a company representative was included and no drivers whereas for other companies there were no company representatives, only driver participants. Comparison of the characteristics of the two samples showed that they differed slightly in that more company representatives came from regional areas, fewer were from larger companies and more were from companies where transport was an ancillary part of the business. Company representatives were more likely to come from companies which carried refrigerated and perishable foods and groceries and less likely to be from courier and taxi truck or express sectors.

Interestingly, despite these differences the company reports of the amount and nature of their drivers work were very similar to the reports from drivers. Companies and drivers were remarkably similar on the hours worked, distances traveled each week and the patterns of activities the drivers did during the shift. The points of departure between the two groups were related mostly to scheduling and breaks, overtime and remuneration. Drivers were more likely to report that their schedule was fixed and to report that they fixed the schedule than the company representatives reported about drivers. On the other hand, drivers reported fewer breaks in the shift and a shorter overall period in breaks than company representatives. Drivers also reported doing more overtime than was reported by company representatives. It seems that the groups tend to differ on aspects of the work that are more under the control of the driver. Companies might set up standard work arrangements, such as standard break times and schedules, but these may change in day-to-day practice and be unknown to the company. The overall amount of overtime and the higher income reported by owner drivers is also consistent with this idea. Drivers may choose to do overtime and some managers may not keep close track of the amounts done for individuals. Productivity-based payments are also under the driver's control so managers may be unaware of the extent of the difference in remuneration between individual subcontractors and employee drivers. Alternatively, it may be that the drivers sample included relatively more of the drivers from companies offering more overtime, more work or higher payments. A more specific comparison of company representatives and drivers in the same companies is needed to clarify this point.

The companies represented in this survey were fairly diverse in terms of geographic location and the role of transport as the main or ancillary task in their company.

Nevertheless, there was considerable similarity between companies in the reported characteristics of work. There were no differences between Sydney and regional companies or between companies with transport as their main business and those with transport as an ancillary part of their business in terms of the size of their driver workforce, their employment characteristics, the nature or amount of remuneration or the size of the area covered by their work. There were a few characteristics on which they differed. The results suggest that Sydney companies (and their drivers) experience somewhat more pressures than regional companies. Drivers for Sydney companies were more likely to work longer hours and do more overtime and spend less time in breaks than drivers for regional companies. They were also more likely to spend more time in the shift actually driving, but less time loading and unloading than regional drivers. The predictability of work also varied with geographic location of company, with regional companies more likely to have regular customers and less likely to have daily and one-off customers compared to Sydney companies.

Companies with transport as their main business also reported more characteristics that suggest higher pressure than companies with transport as an ancillary part of the business. Transport only companies reported longer hours of work for drivers and more overtime and a greater number of stops in each shift than ancillary transport operations. Furthermore, while more transport only companies had predictable daily customers, they were also much more likely to have the most unpredictable work in the form of one-off customers. A great deal of the variation between transport only and ancillary transport companies is likely to result from differences in the nature of the freight task. Transport only companies in the survey were most likely to do courier and taxi truck, express and general/mixed freight tasks. These freight tasks are more service-based and much less predictable, reducing the capacity to plan work ahead. As ancillary transport operations involve moving the companies own products, the ability to plan and manage work and work loads may be much more under the control of the company itself which should also reduce pressures on drivers.

While the company survey indicates considerable similarity between companies regardless of location or the place of the transport task within the company, differences between Sydney and regional companies and transport only and ancillary companies suggest that Sydney and transport only companies are more vulnerable to pressure from a number of sources. Consequently it could be worthwhile to investigate further the characteristics of these types of companies and attempt to understand the causes of the higher levels of pressure.

Company representatives clearly did not see that fatigue was a big problem for the drivers in their company. None of the company representatives reported that fatigue was more than a minor problem. In contrast, around twenty percent of them felt that fatigue was a substantial problem for the industry. Drivers had more similar views on the industry problem with fatigue than on whether fatigue is a problem for the drivers. An overwhelming finding in attitude measurement is that people are much more likely to view an issue as a problem for others than as a problem for them; a phenomenon called unrealistic optimism (Scheier and Carver, 1987). The views of drivers and company representatives about fatigue are consistent with this as more rated personal fatigue as lower than they rated fatigue for the industry.

This highlights a difficulty with attempting to assess the company view of a problem like fatigue that can only be judged subjectively or inferred from work and rest patterns. Asking company representatives about light truck driver fatigue may violate a cardinal rule of survey design, of only asking questions of people to which they know the answer. As they are not professional drivers, company representatives clearly can only answer questions on their attitudes and beliefs about driver fatigue based on their general knowledge of the industry. Whereas the driver survey could ask about personal experiences of fatigue, the questions used in the company survey to measure fatigue frequency, contributors and the best strategies for fatigue management asked about driver fatigue in general. These differences in forms of the question need to be taken into account in interpreting the results. The comparison is certainly worthwhile, however since any differences between company representatives and drivers in their perceptions of the causes of fatigue and the best approaches to managing it are important. As company representatives have control over driver work arrangements, they hold the power to organise them in ways that will minimize driver fatigue, or not. Inconsistencies between company representatives and drivers on the sources of driver fatigue or the most helpful strategies for managing fatigue could result in poor fatigue management within the company. It must be acknowledged that if company representatives were asked specifically about their beliefs about fatigue experiences in their own company drivers, their answers might have been different although they would be potentially no more valid than asking about beliefs about fatigue in general.

Company representatives and drivers showed similarities and differences on the major contributors to fatigue. Both groups rated long driving hours, too little sleep before work and too little night sleep as among the most important contributors. They differed markedly, however on the importance of the use of alcohol and after-effects of stay awake drugs as fatigue contributors. These were rated as contributors by a majority of company representatives whereas they were seen as unimportant by drivers as they were rated as contributors by the smallest number of drivers. This difference is likely to reflect that company representatives may not have been considering the exposure of drivers to these contributors, merely their potential impact. When responding about their own experiences, however, drivers factor in their personal exposure to these contributors. Both groups included activities of drivers in their off-duty time, such as too little sleep at all or at night, as important contributors to fatigue. Although these activities will be affected by the timing and duration of work as well as driver lifestyle choices, it seems that company representatives were more inclined than drivers to include factors that are completely at the control or volition of the driver and less inclined to include work-related factors. Further evidence of this is the finding that companies and drivers also differed in the rated importance of work-related factors of loading and unloading and early afternoon driving for causing fatigue. These were amongst the lowest ranked contributors by company representatives but were ranked fairly high by drivers. It seems that the beliefs of company representatives on the causes of fatigue were more likely to be based on the notion that drivers have control over their experiences of fatigue. This view may also be the reason for the company view that individual drivers might have a fatigue problem, even though the industry does not.

Interestingly, insufficient rest breaks was included as one of the most common contributors for drivers yet drivers reported considerably fewer breaks and less break time than companies said they allowed. This discrepancy suggests that drivers are

not choosing to take fewer breaks in the shift, but that there are other reasons for them continuing to work. It would be useful to determine what factors influence the driver's decision to take or not take breaks and whether there are pressures within the job that make practice differ from stated policy.

There was very good agreement between the views of companies and drivers on the most helpful personal strategies for managing fatigue. Nevertheless, very few companies and even fewer drivers reported that their company had a formal fatigue management policy. Less than half of the companies reported monitoring individual drivers for fatigue. Where companies had fatigue management practices in place, they mainly involved monitoring of schedules, workloads or driving hours. Most commonly, shift hours were monitored with restrictions usually up to 12 hours for most companies but in around 20 percent of companies drivers were allowed between 12 to 16 hours per shift. Weekly hours were less likely to be restricted, but a significant minority of companies allowed up to 72 hours. Clearly, long work hours are a feature of some sections of the light trucking industry and many drivers reported that improved workload monitoring by management would help them manage fatigue.

A significant percentage of companies also reported using organisational flexibility as a fatigue management practice. Providing more drivers at busy times and for loading and unloading and allowing flexibility of scheduling were reported as fatigue management practices by around two-thirds of companies. As drivers were asked different questions about work practices for fatigue management, these results cannot be directly compared. Nevertheless drivers acknowledged greater flexibility in delivery and pickup times and easing tight schedules as amongst the most helpful company strategies. These results suggest that the company strategies that are being used are consistent with driver beliefs about the most useful strategies.

Most companies reported considerable activity on occupational health and safety issues. Most companies required hazard reports and most recorded them, most recorded information about work-related injuries, most did some form of occupational health and safety training and most provided some form of personal protective equipment. Comparatively few companies undertook site assessments of customer premises, being prompted by driver complaints when they were undertaken. Formal medical policies were also much less common and virtually nonexistent for subcontractors. There was great similarity between companies from different geographic locations and those with different transport tasks in their occupational health and safety activities with no differences between companies from Sydney or regional areas or between transport only companies and ancillary transport operations of companies on any aspects of occupational health and safety included in the study.

On the other hand, company and driver views of occupational health and safety differed on a number of aspects. Their perceptions of the most common hazards encountered showed the same basic hierarchy, with poor access at customers, insufficient loading zone parking and other road users being the most frequently reported hazards for both groups. Compared to drivers, however, company representatives under-reported the frequency of hazards due to very heavy traffic, stress, insufficient rest breaks and lack of staff to move goods safely. Reporting of safety problems by company representatives and drivers also showed a very similar

pattern, with the same overall order of importance of problems, but some notable differences. Companies were more likely to report manual handling problems and dangerous sites and access than drivers while drivers were more likely to report safety problems due to poorly packed or dangerous freight and time pressures. It is likely that these differences in perceptions of hazards and problems reflect the relative exposures and responsibilities of each group, with drivers being more aware of traffic, stress and time pressures and problems with individual freight items and company representatives more aware of issues that get reported to them, such as manual handling problems and depot and customer site issues. The importance of manual handling issues for light trucking can also be seen in the nature of the most common injuries reported by both company representatives and drivers. Both groups reported soft tissue and joint injuries from lifting, twisting and other manual handling activities mostly involving the back region.

Two common problems with surveys of working populations are obtaining a representative sample and an acceptable response rate. Obtaining a representative sample is a particular problem for the light trucking sector since like the long haul, heavy trucking sector, there is little information about the relative composition of the industry on which to define a structure of a representative sample of the industry. Consequently, for the current study, sampling of companies was based on telephone listings, many of which were found to be inaccurate. The final list of eligible companies therefore represented those companies in the selected geographical areas that were operating, answered their telephone and could provide sufficient information to determine that they used light trucks and did short haul work. It was possible to describe the geographical location and the type of transport task done by the companies that were identified as representing the sector, but it is not possible to say whether or not these companies are representative of all light trucking in NSW.

Obtaining a good response rate is also a considerable problem in real-world surveys. Only around one in five companies judged to be eligible to participate in the company survey were willing to do so, however the response rate amongst these companies was good, with just over half of them actually completing the survey. This success was undoubtedly due to the use of interviews rather than self-administered surveys. In addition, the composition of the surveyed companies was similar to the companies that were eligible to participate in terms of the types of transport task and geographical location suggesting that the company sample obtained was representative of light trucking companies on at least these characteristics. This survey was exploratory and descriptive as there has been little similar work done in Australia or elsewhere. Further work will be needed to confirm and clarify its findings.

In summary, this study has provided an insight into the characteristics, policies and activities of companies from the light trucking sector, something that has been lacking in Australia and elsewhere. The study showed that despite considerable diversity of participating companies in terms of their location in urban or regional situations or the purpose of transport in the company as the main or an ancillary part of the business, there was not a great deal of difference in the views of company representatives or in their reports of the overall work of the drivers. Where differences occurred they related mostly to the nature of the work pressures such as the amount and predictability of work. The study also provided an opportunity to compare responses on a range of work characteristics, fatigue and occupational health and safety issues from the perspectives of company representatives and

drivers. There was a great deal of similarity in the reports of company representatives and drivers on a range of work characteristics and occupational health and safety experiences. Where they differed was most likely due to differences in the information available to each group, with aspects that are likely to change in practice when drivers are away from their depot being reported differently, such as the characteristics of breaks and the control over the day-to-day aspects of scheduling.

Company representatives and drivers agreed on a number of aspects of their attitudes and beliefs about driver fatigue, such as the best fatigue management strategies, but they also differed in some important aspects. These differences were clearly the result of their different exposure to driver fatigue and their different responsibilities for the problem. Nevertheless, these differences indicate an inconsistency of view that is likely to influence how the industry deals with driver fatigue. Most notably, companies did not view fatigue as a problem for the industry. If this view is representative of a prevailing view by managers in the light trucking industry, it is unlikely that the industry will initiate any activity on driver fatigue management, even though many company representatives and drivers agreed that fatigue is a problem for individual drivers.

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APPENDIX 1: Categories of business in Yellow Pages listings used to recruit companies and drivers

| |
|---|
| Yellow pages category |
| <i>Carriers – light</i> |
| <i>Refrigerated transport</i> |
| <i>Taxi truck services</i> |
| <i>Courier services</i> |
| <i>Removals</i> |
| <i>Transport services</i> |
| <i>Warehousing</i> |
| Rubbish removers |
| Waste reduction and disposal services |
| Frozen food wholesale |
| Chips |
| Pies pastries wholesale |
| Bakers wholesale |
| Milk vendors |
| Dairy products wholesale |
| Cheese |
| Smallgoods wholesale |
| Meat wholesale |
| Store supplies (Food &/or general store supplies) |
| Grocers wholesale |
| Soft drink manufacturers |
| Fruit juice merchants |
| Water cartage |
| Drinking water supplies |
| Water coolers |
| Spring water supplies |
| Building supplies |
| Steel Merchants |
| Landscape supplies |
| Sand soil and gravel retail |
| Sand soil and gravel wholesale |

APPENDIX 2: COMPANY SURVEY



Office use only

Survey #:

Researcher #:

Location code:

OHS and fatigue issues in the light and short haul transport sectors in NSW

Company Survey

2004



I R M R C

Project Team
Rena Friswell
Ann Williamson

**NSW Injury Risk Management Research Centre,
University of New South Wales**

Today's date: _____ / _____ / _____

Part 1: Respondent Characteristics

To begin, we would like to know a little bit about your role in the company

1. What is your position within your company?

Job title: _____

Company division or section: _____

2. What part of your company's light and short haul operations are you able to report on for this survey? *(please tick one)*

- The whole company
- A division of the company
- A depot within the company
- Other Please describe: _____

Researcher note:

*If the interviewee said they could report on a part of the company, then say
"Please answer the rest of the questions about your part of the company,
unless I specifically ask about the WHOLE company"*

Part 2: Company Characteristics

This section asks for some basic background information about your company and its business.

1.1 The company

3. Which of the following best describes your company? *(please tick one)*

- An Owner Driver business *(The proprietor owns and drives a single truck or van)*
- An Owner Operator business *(The proprietor employs drivers for his/her trucks/vans. The proprietor may or may not drive too)*
- An Incorporated Company *(Registered as a company with ASIC; e.g., PTY LTD)*
- Other Please describe: _____
- _____

4. How does the transport task fit into your business? *(please tick one)*

- Transport is the main business
- Making or selling products is the main business, and transport supports this *(go to question 6)*

5. Which of the following best describes your company? *(please tick one)*

- Road freight operator
- Freight forwarder
- Other Please describe: _____

6. Does your WHOLE company have LESS than 20 employees in total (including drivers, office staff, mechanics etc)? *(please tick one)*

- Yes *(less than 20 employees)* No *(20 or more employees)*

7. How many freight or goods vehicles of the following types does your WHOLE company have? *(please tick one option for each type of vehicle)*

| How many: | 0 | 1 to 4 | 5 to 10 | 11 to 50 | Over 50 | Don't know |
|---------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Vans? | <input type="checkbox"/> |
| Light trucks – less than 4.5t GVM? | <input type="checkbox"/> |
| Light trucks – 4.5t to 11.99t GVM? | <input type="checkbox"/> |
| Heavy trucks – 12t GVM or more? | <input type="checkbox"/> |

Researcher note:

*If the interviewee said they could report on the whole company in question 2,
then go to question 9*

*If the interviewee said they could report on a part of the company in question 2,
then proceed to question 8*

8. How many freight or goods vehicles of the following types are there in YOUR SECTION of the company? (please tick one option for each type of vehicle)

| | 0 | 1 to 4 | 5 to 10 | 11 to 50 | Over 50 | Don't know |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| How many: | | | | | | |
| Vans? | <input type="checkbox"/> |
| Light trucks – less than 4.5t GVM? | <input type="checkbox"/> |
| Light trucks – 4.5t to 11.99t GVM? | <input type="checkbox"/> |
| Heavy trucks – 12t GVM or more? | <input type="checkbox"/> |

9. Do you use each of the following types of vehicles for short distance or long distance work? Long distance work is more than 100km from base. (tick as many options as apply)

| | Short haul work (Within 100km of base) | Long distance work (More than 100km from base) |
|--|--|--|
| Vans and light trucks less than 4.5 tonnes GVM | <input type="checkbox"/> | <input type="checkbox"/> |
| Light trucks between 4.5 and 12 tonnes GVM | <input type="checkbox"/> | <input type="checkbox"/> |
| Heavy trucks of 12 tonnes GVM or more | <input type="checkbox"/> | <input type="checkbox"/> |

Researcher note:

If boxes below the dotted line are ticked, then say
 "Please answer the rest of the questions just about your light and short haul work.
 That is, work using trucks less than 4.5 tonnes GVM over any distance and work
 using trucks between 4.5 and 12 tonnes GVM within 100km of base."

10. Approximately what percentage of the light truck and short haul work done by your company falls into the following classes? (just write '0' for any class of work the company doesn't do)

| | |
|--|---------|
| Prime contracting (contracting directly with consignors or customers) | _____ % |
| Subcontracting in company colours for another company ("painted" subcontracting) | _____ % |
| Independent or freelance subcontracting for another company | _____ % |
| Other | _____ % |
| Please describe: _____ | |

Total 100%

11. What are the MAIN types of freight that your light truck and short haul drivers usually carry?

| Sectors you usually work in (you may tick more than one option) | For each sector, briefly list the main goods carried |
|---|--|
| <input type="checkbox"/> Courier and taxi truck | |
| <input type="checkbox"/> Express | |
| <input type="checkbox"/> Refrigerated or temperature controlled goods | |
| <input type="checkbox"/> Perishable food (non-refrigerated) | |
| <input type="checkbox"/> Groceries | |
| <input type="checkbox"/> Removals | |
| <input type="checkbox"/> Waste | |
| <input type="checkbox"/> Machinery | |
| <input type="checkbox"/> Building materials | |
| <input type="checkbox"/> Manufactured goods (e.g., clothing) | |
| <input type="checkbox"/> General/mixed freight | |
| <input type="checkbox"/> Bulk (e.g., grain, quarry materials) | |
| <input type="checkbox"/> Dangerous materials (e.g., fuel, chemicals) | |
| <input type="checkbox"/> Other | |

12. What AREA does your light truck and short haul work usually cover? (please tick one)

- within a 50 km radius of home base depot
- within a 100 km radius of home base depot
- within a 200 km radius of home base depot
- within a 300 km radius of home base depot
- more than 300 km from home base depot

13. In what suburb or town is your home base or depot? _____

What is the postcode there? _____

Researcher note:

If more than one AND the interviewee is reporting on more than one, record the others below.

Depot suburb/town:

P/Code:

Depot suburb/town:

P/Code:

2.2 Drivers

14. Do you employ company drivers for your light and short haul operations? (*Company drivers drive the company's vehicles*)

- Yes
 No (*go to question 19*)

Questions about Company Employee Drivers only

15. How many company employee drivers do you employ in the following categories? (*please write the number of drivers in each category*)

| | Number of drivers in each category <i>(if none, just write '0')</i> |
|--|---|
| Full time employees | _____ |
| Part time employees | _____ |
| Casual employees | _____ |
| Other <i>Please describe:</i> _____ _____ | _____ |
| Total company employee drivers | ===== |

16. How are your company employee drivers paid? (*please tick one*)

- Hourly rate Plus overtime rate? Yes No
 Flat day rate Plus overtime rate? Yes No
 Flat weekly rate Plus overtime rate? Yes No
 Flat rate per parcel or item
 Flat rate per delivery
 Flat rate per load
 Rate per kilometres travelled and/or tonnage carried
 Set percentage of business profits
 Other Please describe: _____

These questions are continued on the next page

Questions about Company Employee Drivers continued

17. Is non-driving work (e.g., loading / unloading) paid at the same rate as driving work?
(please tick one)

- Yes
- No How is non-driving work paid? _____

- Non-driving work is not paid

18. On average, what do full time company employee drivers earn per year (before tax) at your company? (please tick one)

- less than \$20,000
- \$20,000 - \$34,999
- \$35,000 - \$49,999
- \$50,000 – \$65,000
- \$65,000 - \$79,999
- \$80,000 or more

19. Do you use subcontractors for your light truck and short haul operations?
(Subcontractors provide both driver and vehicle)

- Yes
- No (go to question 28)

Questions about Subcontracted Drivers only

20. How many subcontracting FIRMS do you use? _____ firms

21. How many subcontract DRIVERS are provided by these firms? _____ drivers

These questions are continued on the next page

| |
|--|
| Questions about Subcontracted Drivers continued |
|--|

22. How many of the subcontracting firms are:

| | Number of firms in each category <i>(if none, just write '0')</i> |
|---|---|
| Owner Drivers? <i>(Proprietor owns and drives a single truck or van)</i> | _____ |
| Owner Operators? <i>(Proprietor owns at least one truck or van and employs drivers)</i> | _____ |
| Incorporated companies? <i>(Registered with ASIC; e.g., PTY LTD)</i> | _____ |
| Other? <i>Please describe:</i> _____ _____ | _____ |

23. How many of the subcontracting firms are:

| | Number of firms in each category <i>(if none, just write '0')</i> |
|---|---|
| 'Painted' in your company colours? | _____ |
| Independent or freelance? | _____ |
| Other? <i>Please describe:</i> _____ _____ | _____ |

24. How many of the subcontract DRIVERS working for your company are:

| | Number of drivers in each category <i>(if none, just write '0')</i> |
|--|---|
| Full time? | _____ |
| Part time? | _____ |
| Casual or temporary? | _____ |
| Other <i>Please describe:</i> _____ _____ | _____ |

These questions are continued on the next page

Questions about Subcontracted Drivers continued

25. How are your subcontracted drivers paid? *(please tick one)*

- | | | | |
|---|---------------------|------------------------------|-----------------------------|
| <input type="checkbox"/> Hourly rate | Plus overtime rate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Flat day rate | Plus overtime rate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Flat weekly rate | Plus overtime rate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Flat rate per parcel or item | | | |
| <input type="checkbox"/> Flat rate per delivery | | | |
| <input type="checkbox"/> Flat rate per load | | | |
| <input type="checkbox"/> Rate per kilometres travelled and/or tonnage carried | | | |
| <input type="checkbox"/> Set percentage of business profits | | | |
| <input type="checkbox"/> Don't know – the subcontracting company determines pay for their drivers | | | |
| <input type="checkbox"/> Other | Please describe: | _____ | |
| | | _____ | |

26. Is non-driving work (e.g., loading / unloading) paid at the same rate as driving work?
(please tick one)

- Yes
- No How is non-driving work is paid?: _____
- _____
- Non-driving work is not paid
- Don't know – the subcontracting company determines pay for their drivers

27. On average, what do full time subcontract drivers earn per year (before tax) at your company? *(please tick one)*

- less than \$20,000
- \$20,000 - \$34,999
- \$35,000 - \$49,999
- \$50,000 – \$65,000
- \$65,000 - \$79,999
- \$80,000 or more
- Don't know – the subcontracting company determines pay for their drivers

28. Are YOU an Owner Driver or an Owner Operator WHO DRIVES light vehicles or short haul? *(please tick one)*

- Yes
 No *(go to question 32)*

Questions for Owner Drivers and Owner Operators who drive

29. How do you calculate your own pay for driving? *(please tick one)*

- | | | | |
|--|------------------------|------------------------------|-----------------------------|
| <input type="checkbox"/> Hourly rate | Plus overtime rate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Flat day rate | Plus overtime rate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Flat weekly rate | Plus overtime rate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Flat rate per parcel or item | | | |
| <input type="checkbox"/> Flat rate per delivery | | | |
| <input type="checkbox"/> Flat rate per load | | | |
| <input type="checkbox"/> Rate per kilometres travelled and/or tonnage carried | | | |
| <input type="checkbox"/> Set percentage of business profits <i>(go to question 31)</i> | | | |
| <input type="checkbox"/> Whatever is left of business profits after expenses are paid <i>(go to question 31)</i> | | | |
| <input type="checkbox"/> Other | Please describe: _____ | | |

30. Do you include non-driving work (e.g., loading / unloading) when calculating your own pay? *(please tick one)*

- Yes, at the same rate as driving work
 Yes, at a different rate than driving work
How is the rate for non-driving work different?: _____

- No

31. How much were you able to pay yourself last year (before tax)? *(please tick one)*

- less than \$20,000
 \$20,000 - \$34,999
 \$35,000 - \$49,999
 \$50,000 – \$65,000
 \$65,000 - \$79,999
 \$80,000 or more

Part 3: Work information

Researcher note:

If the respondent is an Owner Driver, refer to "YOU" instead of "DRIVERS" or "YOUR COMPANY" for the rest of the survey questions

This section asks you to describe the work carried out by the light truck and short haul drivers working at your company.

3.1 Amount and timing of work

32. How many hours do drivers usually work (including overtime)?

Per day _____ hours

Per week _____ hours

33. How many paid OVERTIME hours do drivers usually work?

Per day _____ hours

Per week _____ hours

34. How many DAYS per week do drivers usually work? _____ days

35. On average, how many kilometres would a driver at your company drive each week for work?

_____ km

36. Do your drivers REGULARLY switch between light truck/short haul driving and long distance heavy vehicle driving (linehaul)? *(please tick one)*

No

Yes

How long do drivers spend doing each type of work before switching?

1 week of each

2 weeks of each

Other Please describe: _____

Researcher note:

*If the drivers switch between linehaul and light/short haul, say:
 "Please answer the rest of the survey questions about the light truck and short haul part of
 your drivers' work"*

37. What types of shifts do light truck and short haul drivers usually work?

| Type of shifts worked by drivers (you may tick more than one option) | How many drivers work these shifts? |
|---|--|
| <input type="checkbox"/> Permanent morning or day shifts | _____ |
| <input type="checkbox"/> Permanent afternoon shift | _____ |
| <input type="checkbox"/> Permanent night shift | _____ |
| <input type="checkbox"/> Regular rotating shifts | _____ |
| <input type="checkbox"/> Split shifts | _____ |
| <input type="checkbox"/> Very irregular shifts | _____ |

38. How MANY breaks would your drivers take during work each shift? _____ breaks

39. In TOTAL, how long would they spend in these breaks each shift? _____ minutes

40. Approximately, what percentage of each shift would drivers usually spend on each of the following work tasks – 1) driving, 2) sorting, picking and packing loads, 3) waiting to load or unload, 4) loading and unloading, 5) administration and paperwork, and 6) any other work? (just write '0' for any tasks they don't usually do)

| | | |
|------------------------------------|-------------------|---|
| Driving | _____ % | Don't know <input type="checkbox"/> |
| Sorting, picking and packing loads | _____ % | <input type="checkbox"/> |
| Waiting to load or unload | _____ % | <input type="checkbox"/> |
| Loading or unloading | _____ % | <input type="checkbox"/> |
| Administration and paperwork | _____ % | <input type="checkbox"/> |
| Other work | _____ % | <input type="checkbox"/> |
| Please describe: _____ | Total 100% | |
| _____ | | |

41. How many deliveries and pickups would your drivers make per shift?

Deliveries: _____ stops per shift

Pickups: _____ stops per shift

Total: _____ stops per shift

42. Approximately, what percentage of pick ups and deliveries are:

Depot to Depot? _____ %

Door to Door? _____ %

Depot to Door? _____ %

Door to Depot? _____ %

Total 100%

43. Does drivers' work:

Depend on incoming linehaul operations? Yes No

Feed outgoing linehaul operations? Yes No

Depend on incoming rail freight? Yes No

Feed outgoing rail freight? Yes No

Depend on incoming air freight? Yes No

Feed outgoing air freight? Yes No

44. Approximately what percentage of a driver's pickups and deliveries are for:

Daily customers _____ %

Regular customers _____ %

Once-only customers _____ %

Total 100%

45. Do drivers have a fixed ROUTE for their pickups and deliveries? (*please tick one*)

Always

Most of the time

About half the time

Sometimes

Rarely

Never

46. Do your drivers work to a fixed TIME SCHEDULE for pickups and deliveries? *(please tick one)*

- Always
- Most of the time
- About half the time
- Sometimes
- Rarely
- Never

47. WHO decides the time schedule for pickups and deliveries? *(please tick one)*

- Company
- Customer
- Driver
- Other *(please describe)* _____

48. HOW is the time needed for a pickup or delivery calculated? *(you may tick more than one option)*

- Driver estimates
- Management estimates
- Management and Driver estimates
- Based on the number of kilometres
- Based on the time of day
- Based on a trial trip
- Based on the total number of pickups and deliveries to be made by a driver
- Other *(please describe)* _____

49. Is the driver's actual arrival time monitored? *(please tick one)*

- Yes
- No

50. What happens if a driver is late or unable to make a pickup or delivery within a scheduled time frame? *(you may tick more than one option)*

- The driver is penalised
- A new time is negotiated with the customer
- The drivers' work schedule is revised
- Other *(please describe)* _____

51. How often do late arrivals happen? *(please tick one)*

- Never
- Sometimes
- Often
- Always

52. How often are driver schedules changed to suit customer demands? *(please tick one)*

- Never
- Sometimes
- Often
- Always

53. What are the top three safety problems facing your light truck and short haul drivers?

1. _____

2. _____

3. _____

Part 4: Fatigue

This section asks about fatigue that your light truck/short haul drivers may experience when DRIVING.

By FATIGUE we don't only mean feeling DROWSY OR SLEEPY. We ALSO mean being TIRED, LETHARGIC, BORED, UNABLE TO CONCENTRATE, UNABLE TO SUSTAIN ATTENTION and being MENTALLY SLOWED.

54. In your opinion how much of a problem is driver fatigue for the light truck and short haul drivers working at YOUR COMPANY? *(please tick one)*

- A major problem
- A substantial problem
- A minor problem
- Not a problem at all

55. In your opinion how much of a problem is driver fatigue in your SECTOR of the light truck and short haul transport INDUSTRY? *(please tick one)*

- A major problem
- A substantial problem
- A minor problem
- Not a problem at all

56. I'm going to read you a list of things that MIGHT contribute to driver fatigue. As I read them out, please tell me whether you think each one is either: "NOT a contributor to driver fatigue", a "Minor contributor", a "Substantial contributor", or a "Major contributor" (tick one option for each potential contributor)

| Potential contributors | Not a contributor | Minor contributor | Substantial contributor | Major contributor |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| Long driving hours | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Too much non-driving work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Loading/unloading | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Waiting to load/unload | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Insufficient rest breaks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Inadequate amount of sleep before work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not enough night time sleep | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Driving at night | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Driving at dawn | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Driving at dusk | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Driving in the early afternoon | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Uninteresting/monotonous driving route | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| New delivery and pickup locations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Heavy highway traffic | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Heavy city traffic | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Poor road conditions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Poor weather conditions (e.g., fog) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Poor cab design | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Poor vehicle ventilation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Vehicle vibration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Family problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Poor diet / irregular eating | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| After effects of stay awake drugs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Use of alcohol | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Are there any Other contributors I've missed? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Please describe: _____

57. I'm now going to read a list of strategies that drivers might use to deal with fatigue. Please rate how helpful you think each one would be for managing driver fatigue - "very helpful", "helpful", "unhelpful" or "very unhelpful". (*tick one option for each strategy*)

| Strategies | Very Helpful | Helpful | Unhelpful | Very Unhelpful |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Stopping to eat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Stopping to rest | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Stopping to nap | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Eating while driving | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drinks containing caffeine (e.g., cola, coffee, tea) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-caffeinate drinks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Smoking | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Stay-awake drugs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Listening to music / radio | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Adjusting the ventilation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Are there any Other strategies I've missed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Please describe: _____

58. Does your company have a formal fatigue management policy:

(*For Owner Driver respondents only*)

Yes

No

For EMPLOYEE drivers? (*Only ask if company has employee drivers*)

Yes

No

For SUBCONTRACT drivers? (*Only ask if company has subcontract drivers*)

Yes, for all subcontract drivers

Yes, for some subcontract drivers

What types of subcontract drivers are covered? _____

No

59. Does your company monitor fatigue in drivers:

(For Owner Driver respondents only)

- Yes
 No

For EMPLOYEE drivers? *(Only ask if company has employee drivers)*

- Yes
 No

For SUBCONTRACT drivers? *(Only ask if company has subcontract drivers)*

- Yes, for all subcontract drivers
 Yes, for some subcontract drivers

What types of subcontract drivers are monitored? _____

- _____
- No

60. *(If 'Yes' in question 59)* How is fatigue monitored?
(you may tick more than one option)

- Observe drivers
 Ask drivers how they feel
 Review workload records (timesheets, number of deliveries, non-deliveries etc)
 Use monitoring devices
 Review truck computer records of driving efficiency
 Review accidents and incidents
 Other (please describe) _____

61. Does your company currently do any of the following things to try to manage driver fatigue? *(you may tick more than one option)*

- Driver education about fatigue
- Driver education about health
- Monitor schedules to make sure they are not too tight
- Monitor workloads to make sure they are not too heavy
- Monitor the driving hours that drivers do
- Restrict hours for drivers
- Minimise night driving
- Make drivers take compulsory rest breaks during the shift
- Allow flexible schedules for drivers
- Allow napping if needed
- Roster extra drivers for high workload periods
- Use other workers for loading and unloading
- Other

Please describe: _____

(Owner Drivers go to question 62)

Are these things done for all drivers? *(please tick one)*

Yes

No Which types of drivers are NOT included: _____

62. Does your company limit drivers' working hours in any of the following ways?

| Type of restrictions applied <i>(you may tick more than one option)</i> | What is the actual limit you apply? |
|--|--|
| <input type="checkbox"/> Limit the maximum hours work per day | _____ hours |
| <input type="checkbox"/> Limit the maximum hours work per week | _____ hours |
| <input type="checkbox"/> Limit the maximum number of days worked in a row | _____ days |
| <input type="checkbox"/> Limit the maximum number of nights worked in a week | _____ nights |
| <input type="checkbox"/> Limit the maximum number of nights worked in a row | _____ nights |
| <input type="checkbox"/> Enforce a minimum number of hours off between shifts | _____ hours |
| <input type="checkbox"/> Other <i>Please describe:</i> _____ | _____ |
| _____ | |
| <input type="checkbox"/> None <i>(go to question 63)</i> | |

Question 63 continued over the page

(Owner Drivers go to question 63)

Do these limits apply to all drivers? *(please tick one)*

Yes

No

Which types of drivers are NOT included: _____

63. Is there anything else you would like us to know about driver fatigue or fatigue management at your company or in the light and short haul transport industry?

Part 5: OHS hazards and experiences

This section asks about more general OHS problems, procedures and experiences for light truck and short haul drivers at your company.

5.1 Policies and practices

64. *(Only ask if company has subcontracted drivers)* Is your company responsible for the occupational health and safety of subcontracted drivers? *(please tick one)*

Yes, for all subcontract drivers

Yes, for some subcontract drivers

What types of subcontract drivers are NOT included? _____

No

65. Does your company have a formal medical or health policy for light/short haul drivers:

(For Owner Driver respondents only)

- Yes
 No

For EMPLOYEE drivers? *(Only ask if company has employee drivers)*

- Yes
 No

For SUBCONTRACT drivers? *(Only ask if company has subcontract drivers)*

- Yes, for all subcontract drivers
 Yes, for some subcontract drivers

What types of subcontract drivers are NOT covered? _____

- No

66. Are your drivers given formal training in any of the following OHS matters?
(you may tick more than one option)

- General OHS regulations and practices
 Manual handling
 Defensive driving or advanced driving skills
 Hazardous substances
 Conflict management or negotiation skills
 Fatigue management
 Stress management
 Other Please describe: _____

(Owner Drivers go to question 67)

If training is provided, is it provided to ALL light truck and short haul drivers working for your company? *(please tick one)*

- Yes
 No Which types of drivers are NOT given training: _____

67. Does your company: *(you may tick more than one option)*

| | Yes | No |
|--|--------------------------|--------------------------|
| Provide relevant protective clothing (e.g. boots, gloves, high visibility clothing)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide all-weather clothing (e.g., winter jackets)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide sun protection (e.g., sunglasses, sunscreen, hats)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide tinted windscreens in delivery vehicles? | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide fully adjustable seats in delivery vehicles? | <input type="checkbox"/> | <input type="checkbox"/> |
| Provide air conditioning in delivery vehicles? | <input type="checkbox"/> | <input type="checkbox"/> |
| Enforce a no-smoking policy in delivery vehicles? | <input type="checkbox"/> | <input type="checkbox"/> |

(Owner Drivers go to question 68)

Does this apply to ALL light truck and short haul drivers working for your company?
(please tick one)

Yes

No Which types of drivers are treated differently?

How are they treated differently?

68. Does your company conduct OHS site assessments of customers' premises? *(please tick one)*

All customers' premises are assessed for OHS

Some customers' premises are assessed for OHS

Are these done

for regular customers only?

for customers who don't do their own assessments?

in response to driver complaints?

other? Please describe: _____

No customers' premises are assessed for OHS

5.2 OHS hazards

69. How often would your light truck and short haul drivers experience each of the following problems at work – on a scale of “Never”, “Rarely”, “1 or 2 times a month”, “Once a week”, “A few times a week”, “Every day”? *(tick one option for each hazard)*

| Problems or hazards | Never | Rarely | One or two times a month | Once a week | A few times a week | Every day | Don't know |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Lack of proper equipment (such as trolleys) for safe loading or unloading | <input type="checkbox"/> |
| Not enough people available to move goods safely | <input type="checkbox"/> |
| Repetitive movements | <input type="checkbox"/> |
| Loading dock design not suited to vehicle or goods | <input type="checkbox"/> |
| Poor goods access at customer's premises | <input type="checkbox"/> |
| No nearby loading zone parking | <input type="checkbox"/> |
| Not enough loading zone parking | <input type="checkbox"/> |
| Vehicle breakdown or mechanical failure | <input type="checkbox"/> |
| Tight deadlines | <input type="checkbox"/> |
| Long working hours | <input type="checkbox"/> |
| Missed rest breaks | <input type="checkbox"/> |
| Conflict with customers | <input type="checkbox"/> |
| Very heavy traffic | <input type="checkbox"/> |
| Dangerous actions by other road users | <input type="checkbox"/> |
| Stress | <input type="checkbox"/> |
| Violence | <input type="checkbox"/> |
| Are there any Other problems I've missed? | | <input type="checkbox"/> |
| Please describe | | | | | | | |

(Owner drivers go to question 71)

70. Do you require drivers to report POTENTIALLY dangerous situations or events (that is, before an incident occurs)? (please tick one)

- Yes Is this required of ALL light/short haul drivers at your company?
- Yes
- No Which types of drivers are NOT required to report?

No

71. *Owner Drivers only:* Do you record potentially dangerous situations or events that you come across (that is, before an incident occurs)?

Other respondents: Are drivers' reports of potentially dangerous situations or events recorded?

- Yes
- No (go to question 73)

72. In the LAST 12 MONTHS, how many potentially dangerous situations and events have been recorded?

Total _____ reports Don't know

Can you say approximately what percentage of the reports relate to:

- Company premises (including vehicles)? _____ % Can't say
- Routes or driving? _____ % Can't say
- Customers' premises? _____ % Can't say

Total 100%

73. *Owner Drivers only:* Do you have set procedures for dealing with potentially dangerous situations or events that you come across?

Other respondents: Does your company have set procedures to deal with drivers' reports of potentially dangerous situations or events (e.g., through an OHS committee)?

- Yes What is the basic procedure? _____
- _____
- _____
- No How are they dealt with? _____
- _____

74. On a scale of “Always”, “Often”, “Sometimes”, “Rarely” or “Never”, how often is your company able to successfully reduce potentially dangerous situations and events reported by drivers, about: *(please tick one option for each type of hazard)*

| | Never | Rarely | Sometimes | Often | Always | Don't know |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Company premises (including vehicles)? | <input type="checkbox"/> |
| Routes or driving? | <input type="checkbox"/> |
| Customers' premises | <input type="checkbox"/> |

Are there any particular barriers to successful action?

5.3 OHS Incidents and Accidents

75. *Owner Drivers only:* Do you formally record the following OHS events?
Other respondents: Do you require drivers to formally record the following OHS events?

(tick one option for each type of event)

| | | |
|---------------------------------------|------------------------------|-----------------------------|
| Incidents or accidents without injury | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Injuries with no lost time | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Non-compensable lost time injuries | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Compensable lost time injuries | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

(Owner Drivers go to question 76)

Are ALL light truck and short haul drivers working for your company required to report these events? *(please tick one)*

Yes

No

Which types of drivers are NOT required to report these events?

76. (Only ask if injuries are recorded, see question 75)

Owner Drivers only: In the LAST 12 MONTHS, how many work-related injuries have you recorded? How many working days have you lost to these injuries?

Other respondents: In the LAST 12 MONTHS, how many work-related injuries have been reported by light truck and short haul drivers at your company? How many working days were lost to these injuries?

(if there were no injuries in total, just write '0' and go to question 79)

| | Number in last 12 months | Total time lost |
|----------------------------|--------------------------|-----------------|
| Injuries with NO lost time | _____ injuries | N/A |
| Lost time injuries | _____ injuries | _____ days |
| Total injuries | _____ injuries | _____ days |

77. In the LAST 12 MONTHS, what were the 3 most common WAYS that light and short haul drivers at your company were injured at work? (Write '1' beside the most common, '2' beside the 2nd most common, and '3' beside the third most common in the table below)

Researcher note:

If the respondent provides a general answer like 'Manual handling', 'Falls, slips, trips', or 'Vehicle accidents' ask them if they are able to be more specific, and use the other relevant options in the table as prompts.

| HOW injuries happened | |
|--|---|
| MANUAL HANDLING – UNABLE TO SPECIFY FURTHER | VEHICLE ACCIDENT – UNABLE TO SPECIFY FURTHER |
| Lifting or carrying heavy item | Forklift accident |
| Lifting or carrying large or irregular -shaped item | Traffic crash while driving for work |
| Repetitive lifting | Traffic crash while travelling to or from work |
| Other repetitive actions (e.g., bending or sorting) | Hit by a vehicle while a pedestrian at a depot or loading dock |
| Twisting | Hit by a vehicle while a pedestrian in a street area |
| Hit or crushed by freight | Injured while doing vehicle repairs |
| Other injuries due to contact with freight (e.g., cold burn) | Other injuries due to vehicle or equipment (e.g., fingers shut in vehicle door, cut on sharp metal) |
| FALLS, SLIPS, TRIPS – UNABLE TO SPECIFY FURTHER | |
| Slipping/falling from a truck or van | Contact with chemicals or other hazardous substances |
| Slipping/falling from loading dock | Contact with electricity |
| Slipping on wet flooring | Violent attack by another person |
| Tripping or falling on steps | Other (please describe): |
| Tripping over obstacles | |

78. What were the most common TYPES of injuries recorded by drivers in the LAST 12 MONTHS? (write the numbers '1', '2' and '3' next to the 3 most common types of injury in the table below.)

| TYPE of injury | | If a particular body part is involved (e.g., back strain, broken fingers), list body part here |
|----------------|--|--|
| | Bruising, contusions or crushing injury - MINOR OR SUPERFICIAL | |
| | - MORE SEVERE | |
| | Cuts, lacerations, grazes, open wounds - MINOR OR SUPERFICIAL | |
| | - MORE SEVERE | |
| | Sprains, strains and dislocations (Joint, muscle, ligament or tendon injuries) | |
| | Broken bones and fractures | |
| | Nerve or spinal injury | |
| | Burns (heat, chemical, friction, cold, electrical) | |
| | Internal organ damage | |
| | Injury due to environmental exposure (e.g., heat stress/heat stroke) | |
| | Foreign object impaled in body | |
| | Poisoning | |
| | Amputation | |

(Owner Drivers go to question 80)

79. In your opinion, how often would drivers at your company suffer an injury at work but NOT report it? (please tick one)

- Rarely or never (i.e., reporting is very good)
- Sometimes (i.e., reporting is moderately good)
- Often (i.e., reporting is very poor)
- Almost always (i.e., reporting is very poor)
- Don't know

What do you think are the main reasons for drivers NOT reporting injuries at work?

80. Does your company record ALL property damage VEHICLE accidents?

- Yes
 No, only some property damage vehicle accidents are recorded

What type of property damage accidents are NOT recorded?

81. In the LAST 12 MONTHS, how many VEHICLE accidents have been recorded for drivers at your company? (if none, just write '0'; if Total is none, go to question 82)

Total vehicle accidents _____
 With property damage only _____
 With any person injured _____ With your driver injured _____

82. From your ACCIDENT RECORDS, can you tell whether driver fatigue might have been a factor? (please tick one)

- Yes, we specifically ask about fatigue for all accident reports
 Yes, we record fatigue if the driver mentions it spontaneously in their report of the accident
 Yes, Other Please describe: _____

 No, we cannot tell if fatigue was a factor (go to question 83)

Only ask if vehicle accidents were recorded at question 81)

How many of the accidents recorded in the LAST 12 MONTHS involved driver fatigue? _____ accidents

83. In the LAST 12 MONTHS, have any of the light truck and short haul drivers at your company reported a work-related illness (for example skin cancer, contact dermatitis, post traumatic stress disorder)? (please tick one)

- No
 Yes How many drivers reported work-related illnesses? _____ drivers
 What illnesses did they report
-
-

84. Is there anything else you would like us to know about Occupational Health and Safety for the drivers working at your company?

THANK YOU FOR TAKING PART IN THIS SURVEY