Integration of Work-Related Fleet Safety within a Workplace Health and Safety Management System:
A Case Study Approach

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ABSTRACT

This paper reports the findings of a research project initiated to assess work-related fleet safety issues in a state government organisation. In particular, special attention is given to identifying fleet safety factors for integration into a wider Workplace Health and Safety Management System (WHSMS). This exploratory case study was carried out across five regional areas, within the state of Queensland, and involved two major components: i) field based interviews; and ii) an analysis of organisational fleet safety operational procedures. Face-to-face interviews (n=146) were conducted with a wide range of staff, using a semi-structured questionnaire. The analysis of fleet safety procedures focussed on work-related vehicle incident reporting, identification of hazard and risk exposures, effectiveness of training and induction programs, and analysis of current safety management systems including policy and procedures. Results of the study suggested that fleet safety within the organisation was not considered a priority and as a result, the full extent of organisational crashes and vehicle-related injuries was relatively unknown by senior management. In addition, this study identified a number of operational and procedural deficiencies in relation to fleet safety. This paper will further outline the major findings of the study and propose recommendations directed at improving fleet safety within organisations as well as integration of fleet safety within a WHSMS.

INTRODUCTION

There is a growing awareness in Australia and many other countries of the need to devote more attention to the issue of fleet and work related road safety. This is in part due to the growing body of evidence confirming the overall impact that fleet related safety issues have on business effectiveness and road safety (Downs et al, 1999; Haworth et al, 2000). In addition, over recent years, many jurisdictions have moved to clarify a vehicle used for the purpose of work as a "workplace" under Workplace Health and Safety (WHS) legislation (Hoskins, 2003). Therefore, organisations are required to include work-related driving within their organisational WHS regulation compliance. Fleet and work related motor vehicle incidents represent a substantial emotional and financial cost to the community. In Australia, road crashes are the most common cause of work-related fatalities, injuries and absence from work (Haworth et al., 2000), with the average time lost being greater than any other workplace claim (Stewart-Bogle, 1999; WA, 2003). Further research has shown that work-related traffic injuries are about twice as likely to result in death or permanent disability than other workplace accidents (Wheatley, 1997) and account for up to 49% of work related fatalities in Australia, when commuting is taken into account (National Occupational Health and Safety Commission, 1998), and 13% of the national road toll (Murray et al, 2003). It has been estimated that the total cost of work related road incidents in Australia is in the vicinity of $1.5 billion (Wheatley, 1997) and the average total insurance cost of a fleet incident to organisations and society is approximately $28 000 (Davey & Banks, 2005). Estimates of the true cost for work related crashes suggest that hidden costs may be somewhere between 8-36 times vehicle repair/replacement costs (Murray et al, 2002). These hidden costs include items such as, workers compensation, medical costs associated with injury to staff, injury rehabilitation, injury to third party, third party property loss, loss of productivity due to days off work, loss of position and staff backfill costs as a result of absence from work, legal costs associated with workers compensation and third party claims, increased risk, insurance premiums and potential loss of customers.

How an organisation performs, or is required to perform, its operations may influence work-related driver safety. Previous research has confirmed the influence of a number of organisational factors on employee safety, including high mileage travel (Collingwood, 1997; Griffith, 1997), time pressures (Downs et al., 1999) and in particular organisational culture (Haworth et al., 2000).

Other influences may include poor maintenance procedures, poor selection of vehicles for the job, poor selection and recruitment of drivers, lack of road safety policies and procedures, etc. These factors may have a direct influence on the incidence of work-related road incidents, for example, worn tyres that are overlooked due to a poor maintenance program may contribute to a crash. In addition, organisational factors may influence driver behaviour, for example, time pressure to complete jobs may influence the driver to speed which in turn may contribute to the incident. Furthermore, research conducted by Murray et al. (2002) suggests that a number of organisations believe that safety, including work-related driver safety, is not considered an operational priority and that senior managers are often unaware of the problem and make safety a low priority behind 'getting the job done'. One method used to elevate the priority of safety within an organisation, including work-related road safety, is to promote it within a Workplace Health and Safety Management System's (WHSMS).

WHSMS's have been defined as: *"that part of the overall management system of an organisation which includes organisational structure, planning activities, responsibilities, practices, procedures and resources for developing, implementing, achieving, reviewing and maintaining the WHS policy, and so managing the risks associated with the business of the organisation"* (AS/NZS 4801:2001).

As such, WHSMS's are designed to be a linchpin in the existing systems of improving Workplace Health and Safety (WHS). The more systematic and integrated management of Workplace Health and Safety (WHS) enables the regulation, advice, and local co-operation work more effectively and efficiently to improve safety within the work environment (Gallagher, 1997). As well as safety, a WHSMS benefits an organisation by improving legal imperatives, ethical concerns, industrial relations and financial performance (AS/NZS 4801:2001). A WHSMS can be assessed by implementing an internal audit process within the organisation or by an external auditing process where certification/accreditation of the WHSMS is necessary for business/contract requirements. The organisation in this study decided to opt for the external audit process to achieve certification for the development of a WHSMS.

Available evidence suggests that the effectiveness of WHSMS's are highly dependent on how they are implemented (Bottomley, 1999). Their success depends on commitment from all levels and functions within an organisation, especially from senior management (AS/NZS 4801:2001). More particularly, Bottomley (1999) argues that an effective WHSMS should involve the following:
- Occupational Health and Safety Policy;
- Planning;
- Implementation;
- Measurement and Evaluation; and
- Management Review.

This paper documents a case study of an organisation which was designed to:
1)   investigate current practice and systems relevant to work-related driving safety; and
2)   provide recommendations for WHSMS audit compliance.
In particular, the paper examines current systems and staff perceptions in relation to fleet safety and identifies opportunities for improving fleet safety within the organisation as well as how it could be better integrated within.

 METHOD

A case study methodology was adopted for the project, to facilitate an indepth examination of the operation of WHSMS particularly relating to work-related driving safety in a government setting. The organisation examined was a Queensland Government owned corporation overseen by the Department of Natural Resources and Mines. The first phase of the research involved a review of the organisation's current systems. This included an in-depth investigation of work-related vehicle incident reporting and analysis, identification of hazard and risk exposures, effectiveness of training and induction programs, and the operation of current safety management systems including policy and procedures. The second phase of the study involved interviews with employees from all operational regions of the organisation.

This method was implemented to highlight perceived work-related driving issues that had an impact on drivers and identify any additional fleet information not identified by the review of current systems. Furthermore, the methodology used within these phases are located below:

Phase 1: Review of Current Systems

1) Policy and Procedures

A comprehensive search of current and historical WHS and Human Resources documents and data files was undertaken. This information included current WHS and Human Resources (HR) Policy and Procedures, training and induction database, and relevant reports and documents pertaining to WHS. Specific documents reviewed which were directly relevant to work-related driving safety included:

- WHS1 Workplace Health and Safety Policy;
- WHS2 Responsibility, Accountability and Consultative Arrangements for WH&S;
- WHS6 Incident Investigation;
- WHS7 Vehicle Accident Response;
- WHS11 WH&S Training, Licences, Certificates and Competency; and
- HR17 Vehicle Purchasing Policy.

2) Incident/Crash Records

The organisation did not have a dedicated database for recording vehicle-related crashes/incidents. As a result vehicle-related crashes/incidents were obtained by individually examining each WHS incident report form over an eleven month period (n = 142), which coincided with the initial roll-out of the organisation's WHSMS. Reviewing each individual incident report form was necessary because no incident database was used to record all incidents.

3) Current Work-Related Driving Countermeasures

All WHS and HR databases and intranet sites were searched to ascertain what type of countermeasures or interventions had previously been implemented within the organisation in relation to work-related driving safety. Regional area documentation was also reviewed.

Phase 2: Employee Interviews

Interviews were conducted with employees who drove work vehicles from throughout the organisation's regions within the state of Queensland. In total, 146 drivers ranging from field staff to management participated in the interviews. The study sample was taken from a total organisational population of 532 staff (representing a participation rate of 27%). However, the study sample represented 64% of operational field type staff (n = 227) where driving was a significant part of their work-related duties. Employees not considered for this study consisted primarily of administrative and engineering/design staff who performed little or no work-related driving. Interviews with participants were conducted on a face-to-face basis either individually or within small groups, using a semi-structured questionnaire that included open-ended questions. Some interviews were conducted by telephone due to the remoteness of the work location of some participants (n = 12). Participants included 82% randomly selected from operational field staff and the remaining 18% included operational managers and supervisors. The names of the interviewees were not recorded, and the various organisational departments and regions where the interviews took place and the name of the organisation remain confidential.

The interviews were conducted using a semi-structured questionnaire, that explored four main issues:

(1) Factors impacting on ability to drive safely for work: including organisational, individual, vehicle and road issues/factors;

(2) Knowledge and/or training received in relation to work-related driving safety: to identify if any training/induction was performed and not recorded;

(3) Factors contributing to driving incidents or near misses: as experienced or perceived by drivers and other relevant personnel; and

(4) Potential countermeasures for the improvement of work-related driving safety: what employees perceived could be done to improve work-related driver safety.

The data collection methods used in this study facilitated triangulation in two ways. Findings generated by the different data-collection methods were compared, as were findings generated by the same method but using different data sources. In addition, during the conducting of interviews the interviewer completed written notes, which were later checked with participants as to correctness of quotes and interpretations made.

RESULTS

Phase 1: Review of Current Systems

Policy and Procedures – The review indicated that organisational work-related driving safety policy and procedures were inadequate. The documents lacked specific information regarding work-related driving safety and issues of accountability and responsibility including driver history and driver safety reference checks at time of initial employment. Rather, information within these documents only covered the steps to be completed in case of an incident/crash and general items of road safety, for example, wearing a seat belt, vehicle maintenance, etc. In addition, no details regarding work-related driving/travel were included in risk assessments.

General WH&S inductions had only been undertaken within the last twelve months, coinciding with the roll-out of the organisation's Workplace Health and Safety System. Within the general induction program there was insufficient information regarding work-related driving/fleet issues. The general Employee Induction, located on the organisation's Intranet site, only referenced the procedure for incident reporting and how to book a pool vehicle. This suggests that fleet/vehicle safety was either not considered a priority or that management were not aware of the problem. In addition, no regional site rules (used for induction purposes) referred to fleet/vehicle safety.

Existing policies indicated that fitted and optional safety features on vehicles, including 4WD's were not considered prior to purchase. Rather, it appeared that vehicle purchasing was generally based on the lowest cost. Furthermore, there appeared to be no consultation with operational staff regarding the suitability of vehicle types and/or safety features. The organisation did not obtain advice regarding the purchase of vehicles from safety professionals nor operational staff regarding type of vehicle required for a particular task/job or available or optional safety features, etc.

The organisation did have procedures in place to deal with crash/incident reporting and these were documented in in-vehicle kits. However, during vehicle inspections it was observed that not all vehicles had these kits and some were incomplete.

Incident/Crash Records – As noted earlier the organisation did not have a dedicated incident/crash database. Furthermore, only limited vehicle incident/crash information could be analysed by accessing specific vehicle incident/crash report forms. Nonetheless, the review of the incident/crash report forms highlighted a number of important issues as summarised in Table 1. It can be seen that over 40% (57/142) of all reported incidents were vehicle (fleet) related. In addition, in two separate months fleet incidents equalled other WHS incidents and on one occasion (October) exceeded other WHS incidents. The relatively large number of vehicle (fleet) related incidents suggests that work-related driving within the organisation is an important safety issue.

| Month | OPERATION CENTRE INCIDENTS | | | | | | | | | | | | | | |
| | Brisbane | | Mareeba | | Ayr | | Biloela | | Bundaberg | | Ipswich | | Contract | | Totals | |
	Fleet	Other	Fleet	Other	Fleet	Other	Fleet	Other	Fleet	Other	Fleet	Other	Fleet	Other	Fleet	Other
Feb	0	0	0	1	2	1	1	0	1	2	0	0	0	0	4	4
Mar	0	0	0	2	0	3	2	1	0	1	1	1	0	0	3	8
Apr	0	0	1	1	5	3	0	0	0	0	0	3	0	0	6	7
May	0	0	0	0	0	3	1	0	0	0	0	1	0	0	1	4
June	0	0	0	0	1	4	2	1	2	2	0	1	0	0	5	8
July	0	0	0	0	2	1	1	3	0	0	1	0	0	1	4	5
Aug	1	2	1	3	3	5	0	3	2	3	1	0	0	0	8	16
Sept	0	1	0	1	2	6	1	0	3	1	0	0	0	1	6	10
Oct	0	0	1	0	2	2	5	3	4	5	0	0	0	0	12	10
Nov	1	1	1	0	2	3	0	1	1	2	2	0	0	0	7	7
Dec	0	1	0	0	0	2	1	1	0	1	0	1	0	0	1	6
Total	2	5	4	8	19	33	14	13	13	17	5	7	0	2	57	85

Table 1: Comparison of Organisation Reported Fleet and WHS Incidents
Note: Fleet = Fleet-related incidents and other = other workplace incidents

Traffic violations/infringements were not recorded under the organisation's current reporting system. In addition, no periodic licence checks were performed to ascertain the current licence status of drivers. Licences were only checked at the time of initial employment.

Current Work-Related Driving Countermeasures – Only one regional area implemented any work-related driving countermeasures. The Biloela region initiated driver training which included a Defensive Driver program and a basic 4WD driver training course.

Phase 2: Employee Interviews

The findings of the employee interviews are presented below according to four main issues examined via the semi-structured questionnaire:

1) Factors impacting on ability to drive safely for work
Responses to questions regarding factors that impact on driver ability to drive safely for work were comprehensive, with some common recurring issues emerging. The results are presented below according to four specific themes that emerged, as outlined in Table 2.

Themes	Content	Examples of Participant Response
Organisational	Work pressure; time of day travel; length of work day (fatigue); distractions	*I feel pressured to get to call outs….like I should be there yesterday* (male driver)
Individual	Inexperience; personal problems; sensation seeking; peer pressure; fatigue	*All the time I'm told to run yellow lights or go quicker by tradies…but they won't drive and take the risks* (young male apprentice)
Road Conditions	Adverse weather; unsealed roads; environmental conditions; familiarity	*I didn't see the roo, the sun was in my eyes* (male driver)
Vehicle	Visibility; suitability	*I drive a sedan on mainly dirt roads….some roads are shocking…. I need a 4WD but they won't give me one* (male driver)

Table 2: Themes associated with factors impacting on ability to drive safely for work

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Within the *Organisational* theme interview participants perceived fatigue and work pressures as the two primary factors that impact on their ability to drive safely for work. For example, *"we are regularly expected to drive to a job, could be anywhere, work all day then drive home….could mean a twelve hour day….we get paid overtime but after a while you're stuffed"* (reference to fatigue) (male driver).

The *Individual* theme indicated a diverse range of issues specifically relating to individual behaviour. Younger drivers, particularly apprentices, reported inexperience in relation to the use of 4WD's and larger vehicles and also pressures placed upon them by older drivers/tradesman to take risks while driving (see example in Table 2). The younger drivers believed they had to comply with this pressure otherwise they would be victimised. Some drivers (n=6) reported personal problems, for example, relationships and marriage separation as factors impacting on their ability to drive safely. For example, *"I've been going through a bullsh*t divorce…have not slept much…I just can't seem to concentrate at times"* (male driver). Interviews also revealed issues of sensation seeking among drivers, for example, as one driver stated *"I love to drive fast, I know it is illegal but I find myself falling asleep if I drive slow…I don't think it's a problem I haven't had an accident in 15 years of driving"* (male driver).

The *Road Conditions* theme primarily related road and weather conditions that drivers believed impacted on their driving. However, it was noted that driving behaviours, for example, driving at incorrect speeds to suit road conditions were also prominent in the examples. Road familiarity was one factor that was raised by a number of participants. For example, some drivers reported being required to travel outside their own usual work areas due to workload and absenteeism issues. With reference to an incident where a driver was working outside his own familiar work area, he stated that *"it wasn't my patch* (reference to individual work area), *wasn't used to the road, went around the turn too fast and hit soft gravel… the b*oody ute spun out"* (driving on unsealed rural road) (male driver).

The *Vehicle* theme highlighted factors of poor rear visibility and suitability of some vehicles, for example, *"guys stack equipment in the centre of the tray between the storage cupboards which reduces rear visibility"* (male driver). Furthermore, a number of drivers (n=26) were dissatisfied with the vehicle they drove for work (see example in Table 2).

2) Knowledge and/or training received in relation to work-related driving safety
Interviews with participants revealed three types of training that had been conducted within the organisation. Firstly, as stated previously, Defensive Driving programs were used by the organisation as a countermeasure for repeat crash offenders. However, investigation showed that only the Biloela region had complied and actually required four drivers (repeat crash offenders) to attend a program. No evaluation of the training was undertaken, however, there was general participant concensus regarding the training program. For example, one driver stated *"I thought it was b*oody great, especially driving in wet weather* (reference to skid pan driving) *a great couple of days, considering I was there because I had a couple of small prangs"* (male driver). Notably, two of the four drivers had been involved in fleet incidents after the Defensive Driving program. Secondly, the Biloela region did recognise that four-wheel drive (4WD) vehicles were involved in significant numbers of crashes and sent operational drivers (n=14) who drove a 4WD to specific training. Comments regarding the training were again similar with one male driver stating that the *"four-wheel drive training was OK, but most of the training was how to get out of a bog, not how to handle the vehicle"* (male driver). No training needs analysis or evaluation of the training was undertaken. Finally, online fleet safety training CD's were sent to all regions by Head Office for all staff to complete. However, no evaluation was conducted to check if this training was actually undertaken by staff. Indeed, from the interviews it was noted that the majority (91%) stated they had not completed it. One driver stated with reference to content of the CD that *"it was so f***in boring, I didn't finish it…just told my supervisor I did"* (male driver).

With reference to fleet-related knowledge/information and inductions received by employees, interview participants unanimously stated that they had not received any information or fleet specific inductions. For example, one driver stated *"induction, the only induction you get regarding work vehicles is where to park in the b*oody depot"* (male driver).

3) Factors contributing to driving incidents or near misses
Participants were reluctant to talk about specific driving incidents, an example of the "do not admit liability" culture evident within many organisations. Only 15 (10%) participants admitted to having a work-related driving incident, whereas 48 (33%) participants stated they were involved in a work-related driving near miss. The main factors identified included fatigue, inattention, road familiarity and work pressures. Fatigue was a common issue raised by participants as an important factor in incidents/near misses. Interview participants reported that the considerable kilometres/time required to travel to job locations, combined with the effects of working all day and then needing to return to the depot that same day resulted in fatigue. For example, one driver stated, "*working out at* (location) *all day and was tired driving back…don't know what happened, wasn't concentrating and didn't see the tyre on the road* (truck tyre blow out left on road) *swerved to miss it, lost control and rear of the wagon side-swiped a tree*" (male driver). In addition, inattention due to fatigue was identified as a potential factor in a number of incidents/near misses. One driver stated that on returning late he "*wasn't thinking of driving and didn't see the f***in roo till too late*" (male driver).

Filling out paperwork and eating meals whilst driving was common, for example, one driver stated that he "*was rushing to get to a call out, I didn't have lunch…just stopped to get a pie from the bakery… driving along some pie dripped on my leg, while trying to wipe it off I ran into the back of the vehicle in front who had slowed down to turn the corner…I only took my eyes off the road for a second*" (male driver).

4) Potential countermeasures for the improvement of work-related driving safety
General consensus from operational field staff was that any countermeasures or interventions would need to be cost-effective or they would not be implemented by management. For example, "*unless it doesn't cost much they* (management) *won't do it*" (male driver). Other participants (n=5) took a more hostile stance in regards to management-driven countermeasures. One typical participant response was: "*get management to drive two to three hours to a job…do a full f***ing days manual labour, then drive home again…see if they can do it day in day out over f***ing time*" (male driver). Generally operational drivers viewed work-related driving as a WHS issue and welcomed any countermeasure to improve safety, as long as it did not mean extra work for them. For example, one participant's response suggested "*anything as long as it doesn't mean more paperwork*" (male supervisor). In contrast, interviews with management, particularly executive management (based at the Brisbane Head Office) revealed a reluctance to consider work-related driving as a serious organisational WHS issue. For example, one participant stated "*it's a driver issue, not an organisational issue*" (female manager). In addition, further discussion with a senior operational manager whose performance bonus was dependant partly on the numbers of WHS incidents stated: "*do vehicle incidents have to be recorded as workplace incidents…after all they are only road accidents…what can we do*" (male manager).

DISCUSSION

The exploratory review of organisational records, documents and data files combined with information received from the employee interviews revealed significant deficiencies within the organisation's WHS management system, specifically in relation to work-related driving safety. The current situation would not meet compliance under the Workplace Health and Safety System auditing process. The following discussion identifies deficient fleet safety policies and procedures and suggests recommendations directed at improving fleet safety within the organisation as well as integration of fleet safety within a WHSMS.

Without the commitment and support from both management and employees a safety system is unlikely to be effective. To establish a positive safety culture requires senior management commitment and involvement of employees, at all levels, in decision-making (Gallagher, 1997). The study suggested that management did not consider fleet safety a WHS issue or an organisational issue. Rather, some management suggested that vehicle incidents were an individual driver issue. Wishart and Davey (2004) suggested that organisations commonly adopt a "blaming" approach when reporting, investigating and implementing interventions within the work environment.

The study revealed that this approach, generally directed toward the driver of an incident, promoted a 'do not admit liability' culture within the organisation and appeared to contribute to failure by some employees to report incidents. Furthermore, employees cannot operate under the organisation's policy and procedures if there are none. To encourage employee commitment organisational fleet safety policies and procedures are required to be developed, specifying accountability and responsibility, to ensure all staff are aware of what is required.

Current organisation incident reports were not recorded or analysed for contributing factors or incident trends. Although reactive in nature, incident information does provide the organisation with an insight into safety deficiencies and incident trends. Thereby, providing relevant baseline information for targeting countermeasures/interventions and benchmarking. In addition, traffic violations/infringements were not recorded under the organisation's current reporting system. Therefore, the extent to which disobeying road rules (e.g., speeding, running red lights, etc) may contribute to road crashes remains unknown. Similarly, the opportunity to identify potentially risky drivers and behaviours by monitoring infringement data was untapped.

Seljak (2002) suggested that organisations should take a risk management approach to fleet safety and integrate fleet safety management into the WHSMS. This approach assists employers to meet their obligations under both occupational health and safety law and road transport law. When developing risk assessments for the organisation, a range of hazards should be considered in relation to the driver, the vehicle and the journey, specifically including travel time in work orders (Seljak, 2002). Details of work-related driving risks were not included in organisation risk assessment documents. Drivers who participated in the study perceived that work pressures and fatigue were primary factors that impacted on their ability to drive safely and contributed also to some incidents/crashes. In relation to work pressures, drivers felt that they had to utilise travel time to 'make up time' to meet organisational and customer demands. Examples included speeding and eating or doing paperwork while driving. Interview participants also stated that fatigue was a significant fleet safety factor. Long work hours and daily travel to and from job sites increased the risk of fatigue. In addition, drivers stated that inattention-related incidents/near misses were directly related to fatigue. For example, drivers often felt tired and as a result suffered difficulties concentrating on the driving task and road environment. Fatigue research conducted by Hartley et al. (2000) confirms the risks in this area, finding that inattention can exacerbate the incidence of fatigue-related crashes. Assessment of the risk focuses on classifying the various driving tasks within the organisation, looking at risk factors associated with journeys, vehicles and drivers to ascertain whether existing safety measures are adequate or whether more needs to be done, enabling problems to be prioritised for attention. Having identified and prioritised the risk factors, a list of objective action plans can be developed to reduce risk at its source, addressing factors such as: vehicle selection and maintenance issues, work travel procedures, and driver selection and competence, etc.

Interview participants indicated that "time of day" may also be a significant fleet safety factor, for example, early morning and late afternoon are typical times where animals are crossing or located near roadsides. Further evidence of this is that 26% of all recorded work-related vehicle incidents occurred due to "hitting animals", primarily kangaroos and occurred in the late afternoon. It would benefit the organisation to conduct a risk assessment to ascertain if rural work schedules can be changed to allow travel, particularly return travel, prior to those hours of most risk from the contributing factor of animals on or near the roadside.

Individual driver behaviour was influenced by a number of factors. Some interview participants indicated relationships and marriage separation as factors impacting on their ability to drive safely. Previous research has suggested that emotional stress may influence aggressive behaviour, possibly by increasing risk taking (Hampson, 1984). In addition, McMurray (1970) reported that during the six months before and after divorce, drivers in her study had a significantly higher crash and violation rate than the general population. The types of violations more often found at these times included speeding, failure to yield, and close following. Work relationships were potentially another form of influence regarding safe driving. For example, inexperienced drivers, particularly apprentices, were encouraged by other staff to take risks while driving, potentially placing they and members of the public under risk of a vehicle crash.

Peer pressure influence to undertake any type of work-related risk is a breach of WHS legislation (WHS Qld, 1995) and information affirming the illegality of this act should be included within the organisation's policies and subsequently communicated to all staff.

Interview participants reported a lack of familiarity with road condition as a factor contributing to vehicle incidents. Drivers are frequently required to perform work outside their usual designated work areas because of increased work demands or illness of other staff, etc. Crashes have occurred, primarily on rural gravel roads, due to sudden changes in road condition. This may be a case of not driving to suit the road conditions, for example, speeding and aggressive driving on gravel roads. However, measures should be considered regarding induction and familiarisation of drivers with other work areas, outside peak work periods.

Interview participants identified poor visibility from vehicles (due to vehicle load and equipment) and suitability of vehicles as significant influences on fleet safety. Inspection into the design of vehicle rear storage space could be undertaken to ascertain if rear vision can be improved. In addition, organisational procedures could be developed to outline requirements for safe loading of vehicles. From the current systems analysis it was revealed that the organisation purchased most vehicles based on the cheapest quote. It was noted also by interview participants that some vehicles purchased were not suitable for the work to be performed or road terrain travelled. Research conducted by Anderson & Plowman (1999) suggested that a best practice organisation selects vehicles not on cost alone, rather takes into account potential beneficial safety features. Therefore, the organisation could consider additional safety features and vehicle suitability when selecting/purchasing new vehicles, especially where off road travel is undertaken.

Responses to questions relating to driver training and induction were relatively brief. This was expected considering the lack of training and competence documents kept by the organisation. However, it was due to the lack of documenting evidence that questions relating to training/induction were asked to ascertain if training had been completed and not recorded. Evidence from the study suggested that fleet safety training was primarily reactive in nature, a reaction to individual multiple incidents. In addition, interview participants stated that other training (i.e. 4WD training) did not meet the specific requirements of drivers in the organisation. Before any Fleet Safety Training is conducted, it would benefit the organisation to conduct a thorough training needs analysis to ascertain if the training meets the requirements of the individual and organisation. Evaluations should also be conducted after training/education to ascertain if the training was effective. Furthermore, to meet WHSMS compliance requirements, general safety inductions should include a work-related driving safety component for all new employees. Fleet/vehicle-related safety should also be included within site rules and all site specific inductions. In addition, an induction into use and safety features should be performed for drivers of all new vehicles issue. The study indicates that a single countermeasure, such as, driver training used by the organisation may not be the most effective method to reduce work-related driving incidents. Rather, the organisation may benefit from the introduction of proactive driver behaviour-based interventions.

Having assessed the system's effectiveness and made any revisions to procedures, it is vital to review the process, including performance indicators to assess progress towards targets (RoSPA, 2003). Therefore, an important component of the WHSMS is continual review and evaluation. This is ongoing and fleet related issues should be included within all reviews and including safety inspections and audits. Regular review and evaluation of the WHSMS identifies whether systems are effective and efficient and highlights those areas which require further attention, for example, additional countermeasures/interventions. The WHSMS is basically a cycle of continual safety improvement.

Study Limitations

The study sample does pose issues relating to the generalisability of the results. This is due primarily to the specific and differing nature of the organisation's industry and major area of work performed. However, sufficient detail was obtained to meet the aim of the study, that is, to identify fleet safety issues directed at improving fleet safety within the organisation as well as integration of fleet safety within a WHSMS to meet auditing requirements.

In addition, similar deficiencies and factors that impacted fleet safety within this study are also highlighted within other fleet-related research literature (Anderson & Plowman, 1999; Collingwood, 1997; Murray et al., 2002; WA, 2003; Wishart & Davey, 2004). It is recommended that other studies should be undertaken within both government and industry organisations to confirm the findings emerging from this study.

CONCLUSION

This study identified a number of opportunities to improve work-related driving within the organisation, particularly in relation to the integration of fleet safety within the WHSMS.

The successful integration of fleet/work-related driving safety within an organisation's WHSMS would appear to require full management and employee support and commitment (Gallagher, 1997). Consequently, this should be encouraged early in any fleet safety intervention. More particularly, this case study highlights how organisational documents need to be amended to include specific information regarding work-related driving safety. This is required to not only meet compliance and audit issues but also provide the organisation and its employees with a starting point and necessary information on what is required.

It would benefit the organisation if incidents, training and inductions, etc were recorded within databases. This would not only meet compliance but would enable an easier analysis of the data. Furthermore, a risk management methodology is necessary to meet compliance issues, assist the improvement of fleet safety within the organiation and determine priorities for WHSMS integration.

The existing research and evidence identified within this study suggests that a "no blame" approach should also be adopted and encouraged across the organisation. Historically, organisations have adopted a reactive approach to work-related road/vehicle incidents and usually focus on a single countermeasure, for example, skills based driver training, in an attempt to improve the organisation's fleet safety (Wishart & Davey, 2004). This study concerns work-related road safety and as such a single countermeasure is likely to have limited impact. Rather, organisations need to adopt a proactive multiple strategy approach and target long-term intervention strategies aimed at not only a fleet safety system but also behavioural and cultural aspects of the organisation. Continual review and evaluation of systems combined with identified interventions would ensure continual improvement of fleet/work-related driving safety within the organisation.

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