Company vehicle incident reporting and recording (CoVIR)

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Executive summary

This project is about the reporting, investigation and recording of accidents involving company vehicles, which are a major cost area in terms of both human life and money.

The research was commissioned by the Department for Transport to better understand accidents involving company vehicles in Britain. From what is known, it is clear that company vehicles of all types are involved in a disproportionately high number of accidents when compared to vehicles not being driven for work purposes. Many company vehicle accidents are never recorded at the national level because they fall between or outside of the current Stats19 and RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995) reporting systems.

Given this, the research had two primary objectives.

1. To produce a comprehensive review of company vehicle incident reporting and recording (CoVIR) systems currently employed by a range of organisations.
2. To develop best practice recommendations for a company vehicle accident recording system that could be used throughout the UK.

The methodology adopted to meet these objectives included a literature review, analysis of 80 existing company vehicle accident report forms, and interviews with over 50 managers from a range of organisations, who were also requested to complete a questionnaire.

The main findings of the research suggest that the scope of current systems includes pre-accident information, at-scene information, post-accident procedures and accident analysis. Current systems are strong on claims management, but weaker on accident investigation and analysis for risk management purposes. Other problems include: poor quality reporting, a lack of standard codes and key performance indicators (KPIs) for classifying and analysing accidents involving company vehicles, and the lack of any formalised system of auditing company performance. For the situation to be improved, change management and implementation were identified as key barriers to overcome.

Based on the analysis of existing processes, a new system was developed which included an at-scene 'bumpcard', a combined 'accident report and investigation form', a 'coding card' and a 'user manual'. This new system was pilot-tested in 13 companies over 3 months and in more detail by 5 companies over 15 months. These studies helped to suggest areas where improvements could be made and to identify the strengths of the system and the difficulties and limitations of developing one generic system for all vehicle operators to use. From this it was possible to identify a series of recommendations.

The new system is good for converting insurance claims data into risk management information. To implement the system more widely a major change management strategy is required. This should involve key players in the industry, particularly insurance representatives. At the same time, it would be prudent for managers to implement a vehicle accident reporting and recording self-audit and set of KPIs based on the research findings (Appendix 5.1). This will allow companies to identify 'where they are now' as well as areas for improvement. The audit and KPI approach may also remove the requirement to develop a completely new system, as it could allow improvements and a 'bolt-on' risk management section for existing company systems. At the national level, including *'purpose of journey'* in the Stats19 reporting and recording system would allow a fuller understanding of the 'work driving' problem and better targeting of both road and health and safety resources.

Glossary and abbreviations

Abbreviation	Meaning
24/7/365	24 hours 7 days per week 365 days a year
ABI	Association of British Insurers
AIRSO	Association of Industrial Road Safety Officers
Ambulance chasing	Promiscuous advertising of 'no win-no fee' legal services
AMC	Accident Management Company
Broker	Helps vehicle operators to arrange and manage their insurance
Bumpcard	Form completed at the scene of an accident by drivers
BVRLA	British Vehicle Rental and Leasing Association
cc	Cubic capacity of a vehicle engine
Circle check	Pre-drive check of vehicle by driver
Company vehicle	Includes all vehicle types, such as Large goods vehicle, van, car, motorbike, bus, ambulance and fire appliance, which are operated by an organisation
CoVIR	Company vehicle incident reporting and recording
DfT	Department for Transport
DOT	Department of Transport
DSA	Driving Standards Agency
DTLR	Department for Transport, Local Government and the Regions
Excess/deductible	The first part of the cost of an insurance payout, paid by the claimant
FHA	Federal Highways Agency
FORS	Australian Federal Office of Road Safety
FTA	Freight Transport Association
FTSE100	Financial Times Stock Exchange top 100 companies
HQ	Headquarters
HSC	Health and Safety Commission
HSE	Health and Safety Executive
ILT	Institute of Logistics and Transport
KM	Kilometres
KPI	Key performance indicator
LGV	Large goods vehicle
LTSA	Land Transport Safety Authority
MAIC	Motor Accident Insurance Commission

MIB	Motor Insurance Bureau
MID	Motor Insurance Database
MPH	Miles per hour
NHS	National Health Service
N/A or N/K	Not applicable or not known
NZ	New Zealand
OMC	Office of Motor Carriers
OSHA	Occupational Safety and Health Administration
PCV	Passenger carrying vehicle
PI	Personal injury
PR	Public relations
RAGB	Road Accidents Great Britain
Report	Accident report form
RHA	Road Haulage Association
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RoSPA	Royal Society for Prevention of Accidents
RTA	Road traffic accident
Stats19	Police report form for recording on-road injury accidents in the UK
TRL	Transport Research Laboratory
V&P	Vehicle and property
Vision Zero	Swedish road safety philosophy based on a target of zero fatal crashes
Woolf Reforms	Reforms of the UK civil justice system, which mean that strict time limits now apply for accident reporting and exchanging insurance information

Chapter 1 - Introduction

1.1 Introduction

The long-term objective of this report is to help companies and organisations which use vehicles ranging from motorbikes to lorries to work out how many accidents their vehicles are involved in, and why this is so. The terminology 'Company vehicle incident reporting and recording (CoVIR)' has been created to describe this objective.

Information about the extent and causes of their accidents can help companies make informed decisions about the most effective measures to implement to reduce their accident rates. Such measures could be applied to organisational systems, people, the working environment and the vehicles, and can directly contribute to a reduction in deaths, injuries and damage to vehicles on the road and on company premises, as well as improving the efficiency of UK industry.

This report focuses on the current situation in Britain regarding the way in which vehicle accident reporting, recording and analysis is undertaken by companies. Relevant material from several other countries is also drawn upon. Best practice recommendations are then outlined.

The remainder of this chapter outlines the need for the research, some definitions, the key objectives and tasks, and the project structure.

1.2 The need for the research

The actual extent of accidents involving company vehicles in Britain is limited, because *'purpose of journey'* data is not recorded in national accident statistics. It is, however, increasingly recognised by government, industry groups and the media as a problem that needs to be tackled by vehicle operators through improved management practices.

Given these concerns, it is perhaps surprising that many companies still do little to proactively improve the limited information they have about the numbers of accidents involving their vehicles, or the causes of these accidents. Without this information, it is impossible to evaluate the effectiveness of any of the proposed interventions.

The amount of information that drivers are required to report to their employers about an accident, and the extent to which that information is then recorded and analysed by the company, is often very limited indeed. The information collected is led by the requirements of insurers when making or trying to defend an insurance claim, rather than by the need of the company to identify its risks so that it can tackle them in a meaningful way.

In addition, companies report and record their accident information in different ways. Sometimes even divisions of the same company report and record their accident information differently. This makes it hard to benchmark the safety record of vehicles in different organisations. Lack of reliable data makes it very difficult to effectively decide which risk management countermeasures to implement, let alone evaluate their success and cost effectiveness (Downs *et al* 1999, Hawarth *et al* 2000, Murray and Dubens 2000). Poor, or incomplete, data makes it harder to defend insurance and personal injury claims, sometimes fraudulent and increasingly costly, from third parties. Finally, data is highly important for helping to show 'due diligence' and that appropriate safe systems of work are in place.

At the same time, an increasing number of large vehicle operators are working outside the traditional insurance framework, by becoming self-insured. Even aggregated insurance data is, therefore, not the full picture.

Before setting out the aims and methodology for the research, it is necessary to define the key words in the title of the project: *'company vehicle incident reporting and recording'.*

1.3 Definitions

1.3.1 Company vehicles

Company vehicles are defined as vehicles being operated on behalf of an organisation, such as a company or local authority, for work purposes. This type of vehicle could range from large goods vehicles to pizza delivery mopeds, and includes trucks, vans, company cars, buses, fire engines and refuse collection vehicles. It could also include an employee's own vehicle being driven for work purposes. As an indication of scale there are approximately 2.25 million company-owned cars on the road in Britain at the current time.

1.3.2 Accident, incident, crash, collision, near hit, wear and tear

The definition of a vehicle accident is not easy, with different groups interested in incidents, crashes, collision, unreported damage and the exact cut-off point between wear and tear and accidents. It is also true that the word 'accident' is not seen as very 'politically correct' at present for a range of reasons. At the beginning of the project 'incident' was the preferred word, hence the project title *Company vehicle incident reporting and recording*. As the project progressed, however, the word 'accident' replaced 'incident' because it is used in national publications such as *Road Accidents Great Britain* (RAGB) and because of the wide range of different definitions given to the term 'incident'.

- Boyle (1999) suggests that accidents have a specific outcome such as damage or an injury, whilst incidents may not, as they include all undesired circumstances and near hits, which could cause accidents.
- Bateman, King and Lewis (1996) advocate the use of accident in all situations, including property damage, process loss, injury and, notably, near hits.
- One project participant defined an incident as a 'near hit', another described it as an 'off-road accident' and a third participant saw incidents as 'customer complaints'.

After consideration of accident definitions further in Chapters 2 and 3, the project's accident definition includes **'any contact or alleged contact, both on- and off-road', and will extend RAGB definitions to include damage-only accidents.**

1.3.3 Reporting and recording

Accident reporting is the process by which the driver tells the organisation about an accident. Depending on the severity of the accident, in most cases, a driver will typically complete a short bumpcard to take details at the scene of the accident, then complete a report or claim form on return to base. More recently, some organisations have set up call centres so that drivers can report their accident by telephone or via the internet. Accidents that are more serious are reported to the Police and many organisations have an escalation process for managing the scene and the media.

Accident recording is the process by which organisations investigate an accident and then code, store and analyse the information from the report form for insurance claims and risk management purposes.

1.4 Project objectives

One way to improve knowledge and understanding would be to establish a standardised national system of recording data on accidents involving company vehicles. The outcomes of this could be to (1) reduce the extent of reporting and recording problems, (2) understand and benchmark the true extent and nature of accidents involving company vehicles, and (3) begin to develop relevant and cost effective ways of reducing them.

In order to establish a standardised system of recording data on company vehicle accidents, the project has two primary objectives:

1. **To produce a comprehensive review of company vehicle accident reporting (CoVIR) systems currently employed by a range of organisations.**
2. **To develop best practice recommendations for a company vehicle accident recording system that could be used throughout the UK.**

Chapter 2 - Background

2.1 Introduction

In Britain, road accident statistics are collected on the Stats19 form by the Police. This information is collated and published in the Road Accidents Great Britain (RAGB) report produced by the Department for Transport (DfT).

It is estimated that a major proportion (more than 95 per cent) of accidents involving company vehicles (typically single vehicle, damage only, often at familiar and on-site locations) are not included in RAGB statistics (Adamson 1997). This is because damage only and company premises-based accidents are not attended or reported on by the Police. A large proportion of company level accidents occur off-road (Murray *et al* 1996, Murray 1998), particularly at collection and delivery points. Research by Yates (1997) found that as many as 30 per cent of injury accidents on the road never make it into the Stats19/RAGB system. This is backed up by similar Transport Research Laboratory (TRL) research (Simpson 1997) and suggests that the true extent of accidents involving company vehicles is unknown in Britain. RoSPA (1998, 1999) focused attention on managing what they refer to as occupational road risk; the risk, harm and loss involved in work-related driving. The following are estimates of the extent of the problem:

- TRL research (Lynn and Lockwood 1999) suggests that company car drivers have about 50 per cent more accidents than ordinary drivers, even after allowing for their higher mileages;
- approximately 25-33 per cent of all road fatalities in Britain may be work-related (www.hse.gov.uk/road/index.htm);
- driving 25,000 miles per annum for work may produce a greater annual risk of death than coal mining or construction (RoSPA 1999);
- Labour Force Survey data (quoted by RoSPA 1999) suggests that there are approximately 77,000 road-related injuries per annum to employees and the self-employed;
- Martin (1999) quotes figures suggesting that, across all vehicles, there are 2.5 million damage-only accidents in the UK per annum. Of the 23 million cars currently licensed in Britain, 2.25 million are company owned, driven by about 3 million company car drivers; and
- various sources (Dole 1991, Fidderman 1993a, Murray *et al* 1996, Lynn and Lockwood 1999) show that, on average, between 20 per cent and 65 per cent of company cars will be involved in an accident each year. During 2000, this equated to more than a million fleet vehicle insurance claims costing almost £2 billion (Fleet News 2002).

2.2 The legal framework

The Health and Safety at Work Act 1974 and the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995 cover many sectors of industry (for examples see Corzine 1999, Peel 1999, Prezlik 1999, Taylor 1999). Some sectors, including rail, are governed by further regulations, reporting directly to the Health and Safety Executive (HSE). On-road accidents are generally not reportable under RIDDOR regulations, but may have to be reported to the Police, who may record details on a Stats19 form, under the 1988 Road Traffic Act. This means that accidents, in terms of road transport and company vehicles, fall into two categories: at work and on-road.

2.2.1 Company vehicle accident regulations - RIDDOR (generally off-road/at work)

Vehicle accidents are only RIDDOR-reportable under Health and Safety regulations if the accident happens at work. For company vehicles this means that on-site accidents are reportable, but not usually those that occur on-road. The HSE (1999) pointed out that transport accidents account for 41 per cent of deaths in the food and drinks industry, with the majority of accidents occurring whilst

tipping or unloading vehicles. It also suggested that 80 per cent of all accidents reported to it fall into just 12 categories and showed the substantial benefits to be gained from focusing on specific industrial areas.

The introduction of the Health and Safety at Work Act 1974 gave employers a legal duty to take all reasonably practical steps to ensure the health, safety and welfare of their staff at work. By implication, employers must identify hazards created by their work, assess and take measures to control these risks.

Further regulations, such as the Control of Substances Hazardous to Health 1988, Management of Health and Safety at Work 1992, and RIDDOR, define the systems needed for employers to ensure that they were taking all 'reasonably practical steps'. Companies were forced to develop a more systematic approach to health and safety at work to comply with these regulations.

Nicholson (1985), commenting on RIDDOR when still in its proposal stage, described it as a tool designed to overcome the lack of information available to the HSE and allow it to undertake the following tasks:

1. Investigate national accident trends.
2. Carry out accident investigation and preventive action.
3. Assess the effectiveness of activities, national performance, particular industries and the success of remedial measures.
4. Provide a common framework to compare safety performance.

Under RIDDOR, a designated responsible person is required to record and report the following.

- fatal and other major accidents;
- accidents causing employees more than three days incapacity for work;
- work-related diseases;
- gas accidents; and
- any dangerous occurrence.

The person responsible for reporting and recording will usually be the employer or the person in control of the premises. All RIDDOR-reportable offences must be recorded in the company accident book. Lists of RIDDOR-reportable accidents are available (HSE 31) to prevent misinterpretation and avoid confusion over what should be reported. Official reports must be sent to the relevant authorities (either the local authority environmental health department or the HSE) within seven days on form F2508. Records must be kept by the employer at the place of employment for three years. The accident book must be in a form approved by the HSE. If there is any doubt over which authority to report to or whether to report an accident, the HSE should be contacted (RIDDOR).

Under Social Security regulations, employees must report accidents to their employers (Croner 1999b). The HSE (1999) also urges benchmarking injury rates against the industry average, best and worst rates.

For all reportable accidents or dangerous occurrences, the following details should be kept:

1. Date and time of the accident or dangerous occurrence.
2. Full name and occupation of the person affected, including the nature of the injury. Where the injured person is not an employee, the required details are full name, status (for example passenger, visitor) and nature of injury.

3. Place where the accident or dangerous occurrence happened.
4. Brief description of the circumstances.
5. Date the accident or dangerous occurrence was first reported.
6. Method by which the report was made.

RIDDOR is enforced by the HSE. It has powers to impose statutory notices on employers when procedures do not meet safety requirements. The HSE can fine companies that fail to comply with health and safety law, or HSE notices, up to £5,000, or up to £20,000 for some offences which are dealt with by a Magistrates' Court. More serious offences, dealt with in the Crown Court, can result in an unlimited fine.

Nicholson (1985) stressed the importance of depth of accident data available before complex analysis is possible, stating that relatively small databases of information may give inappropriate conclusions.

According to Croner (1999b), road traffic accidents (RTAs) are only RIDDOR-reportable under current legislation if a person is killed or injured because of the following:

1. Exposure to a substance conveyed on the vehicle.
2. The activities of another person who was engaged in work connected with the loading or unloading of the vehicle.
3. The activities of another person engaged in work on or alongside a road concerned with the construction, demolition, alteration, repair or maintenance of the road or markings or equipment on), or verges, fences, hedges or boundaries of the road, or buildings or structures adjacent to or over the road.
4. An accident in connection with the movement of a vehicle on a road that involved a train.

Some on-road accidents, for example where dangerous substances have been released or caught fire, where lifts or hoists, cranes, mobile platforms or fork lift trucks have failed, or where something has come into contact with overhead power lines, must also be RIDDOR reported (Croner 1999b).

2.2.2 Company vehicle accident regulations - non-RIDDOR (on-road)

On-road accidents involving a company vehicle are generally not RIDDOR-reportable, but may be required to be reported to the Police and may then be recorded as part of the Police Stats19/RAGB data (Croner 1999a). An accident is reportable if injury is caused to another road user, damage is done to another vehicle or property, or to certain animals other than one being carried inside the vehicle.

Under the Road Traffic Act 1988 drivers must stop if injury has been caused to another road user and must report the accident to a Police officer or at a Police station as soon as is reasonably practicable and, in any event, within 24 hours. Failure to do so could result in up to ten penalty points on their driving licence and a fine of up to £5,000 and/or imprisonment. In a damage-only accident the driver must, if reasonably practical, inform the owner of the property.

At the national level in Britain, local Police forces are responsible for collecting RTA (Stats19) data and reporting to the DfT, Scottish and Welsh Offices. This means that accident data is collected in a relatively consistent way in all parts of Britain. The Stats19 report form consists of an accident record, a vehicle record to be completed for each vehicle involved and a casualty record for each casualty. Stats19 data provides the basis for remedial engineering work on public roads, national and local level education, training, publicity and formulating/monitoring policies to improve all aspects of road safety and road traffic legislation. Broughton *et al* (1998) discussed how this Police data helps to target reductions in road casualties at both national and local levels and has proved invaluable in monitoring accident trends and developing new measures to improve road safety. Until January 1999, however, no attempt was made centrally to report, record and publish statistics on accident causation.

This was identified as a limitation during the 1997 review of Stats19 (DTLR 1997) and led to research on *'precipitating and contributory factors'* being undertaken by the TRL.

It developed a new recording system involving 15 precipitating factors and 54 contributory factors which has been pilot tested by 15 Scottish Police forces. Investigators are asked to select and code the impact of the precipitating and contributory factors as 'definite', 'probable' or 'possible' (Broughton *et al* 1998). This approach is still being evaluated as part of the DfT's '2002 Quality review of Road Accident Injury Statistics'. It is explored further in Chapter 4. This data collected by the Police at national level is very useful. For understanding accidents involving company vehicles, however, its relevance is limited to reacting to injury accidents. By far the largest proportion of accidents involving company vehicles are damage only and many occur 'off-road'. This means that the majority of company vehicle accidents fall outside national (RAGB) statistics. Up to now many companies have managed RIDDOR (off-road) and RTAs relatively separately, even though there is a great deal of overlap.

According to RoSPA (1999), the safety features of road traffic law take precedence over RIDDOR regulations, with the Police as enforcement body. This approach does not address the question of an employer's duty of care to its employees and other road users because the Police lack the expertise to investigate employers' health and safety management systems and the HSE lack the resources. This means that there is currently a gap in the legal framework. RoSPA (1999) then make several recommendations:

- the need for a common, practical accident data management framework to assist employers in managing the risks for 'at work' drivers;
- the insurance sector should become more proactive in helping clients manage their occupational road risk;
- the HSE should be given explicit responsibility and the appropriate resources for promoting and enforcing occupational driving safety and co-ordinating the efforts of other players; and
- Government should establish a high-level inter-agency review group, under an independent chair, to focus on this area.

Overall, RoSPA believes that the HSE should play a bigger role in investigating work-based road accidents. It lobbied strongly for an inter-agency review group to be set up to review work-related road risks. This occurred during 2000, with the formation of the Work Related Road Safety Task Group set up as part of the Government's Road Safety Strategy (DTLR 2000).

Full details about the Work Related Road Safety Task Group and what it has done are shown on the internet[1] Briefly, it set out to achieve the following aims:

1. Establish accurate casualty and incident statistics.
2. Establish causes and methods of prevention.
3. Promote a public debate on best practice.
4. Propose minimum management standards.
5. Propose if possible non-legislative mechanisms for dovetailing road traffic law with health and safety at work law.
6. Propose mechanisms for effective liaison between those who enforce road traffic law and those who enforce health and safety at work law.

[1] More information about the Work Related Road Safety Task Group: www.hse.gov.uk/road/index.htm.

In November 2001, the Task Group made the following primary recommendations, which could have major implications for work-related road safety:

- Health and Safety law should be applied more rigorously to on-road crashes;
- work related road safety should be managed as part of health and safety programmes;
- employers must ensure drivers are competent;
- an HSE information campaign and guidance document should be produced;
- Stats19 should be adapted to collect *'purpose of journey'* data;
- on-road crashes should be included in RIDDOR at its next review;
- there should be a co-ordinated cross-agency approach to investigation and prevention;
- a new programme of joint DfT/HSE research should be established;
- a standing body should be set up to take the recommendations forward - for review in 2004; and
- the resource requirements for implementation need to be evaluated.

2.3 Company vehicle accident reporting and recording

Company-level accident data collection can be split into three main elements: pre-accident, post-accident investigation, and post-accident analysis.

2.3.1 Pre-accident

Croner (1999b) suggested that companies should have systems in place to ensure that employees report any accidents in accordance with the organisation's accident reporting procedure. The following is a combination of the data that Croner (1999a) recommend drivers give to the Police and that RoSPA (1998) recommended that companies should collect after an accident:

1. Date, time.
2. Purpose of journey and starting time.
3. Environmental conditions (road surface, visibility).
4. Exact location, such as street name and reference to a fixed point.
5. Sketch of accident scene and, if possible, a photograph of the damage, accident, surrounding area and third party.
6. Position and direction travelled of vehicles and other parties.
7. Brief account of what happened, in clear language.
8. Details of damage to vehicles and property.
9. Injuries.
10. Cause of the accident.

RoSPA (1998) concluded that it is essential for drivers to be properly trained in how to gather the data correctly and quickly. Accident report forms in the vehicle can help in the process. RoSPA also advocates gathering as much data as possible, even on near hits and minor damage, whether occurring on- or off-road.

This information forms the basis of most company accident report or insurance claims forms. In fact, accident reporting and recording cannot be fully understood without understanding insurance issues, which is why they are discussed later in this review.

Many companies have procedures in place for reporting vehicle accidents, often communicated through induction, training and a driver handbook. The information given ranges from a brief explanation of legal requirements (for example to stop if an accident has taken place and report injury accidents to the Police) to detailed instructions on what information to record at-scene to aid reporting to both the Police and the company. Some examples are considered.

The *TNT Driver Handbook* (2001) encourages drivers to make sketches and take photographs of the accident and surrounding area to supplement their written and verbal reports. A camera is provided for this purpose in all TNT vehicles. TNT drivers must immediately report all accidents by phone. Drivers failing to report accidents face disciplinary action, including possible dismissal. TNT's system has recently been independently audited (AON 1999) and is a very thorough approach that is drawn on throughout this report.

P&O's *Roadways Driver Handbook* (1996) explains the legal reporting requirements. It tells drivers the details they are required to give by law, to whom and by when, and advises that a driver should not admit liability or even give a statement to Police before telephoning his or her depot for instructions. The handbook gives advice on how to manage the scene to prevent further accidents, what to do about anyone injured in the accident and precautions to take against fire. It also states that the driver must be sure that his or her vehicle is roadworthy before driving away from the scene.

Ryder Logistics gives drivers a small cardboard wallet containing an accident report form for use in the event of an accident. The inside covers of the wallet give the driver instructions. The back of the wallet is a 'bumpcard' for the driver to collect accident, third party, vehicle, witness, passenger and Police details. The bottom of this bumpcard is a tear-off section to give Ryder's details to third parties. It includes the Ryder insurance department's telephone number in case the third party wishes to make a claim. An increasing number of companies use such bumpcards to manage the scene. 'Accident packs' for drivers are becoming popular. These typically include a disposable camera, an accident management guide, an accident report form (often a standard European form), a pen, a torch and a bumpcard to exchange details with third parties.

Home Express has a typical large company operating procedures manual, which sets out the responsibilities of different managers relating to the control of vehicle accidents:

1. The general manager has responsibility for making sure all staff are fully briefed on procedures.
2. The training or health and safety manager should ensure employees receive adequate training and that there are sufficient numbers of qualified driving assessors to deliver this training.
3. The controller is responsible for the day-to-day operation of the procedure.
4. Drivers are responsible for taking due care and attention when driving and, when necessary, acting in accordance with procedure.

The manual includes instructions for drivers involved in an accident or hit whilst parked. The general manager, or a nominee, must investigate all vehicle accidents on the day of the accident or on the next day. The interview will include the cause of the accident and the general manager will decide whether the driver was at fault using the guidance criteria provided. A blameworthy accident is defined as follows:

1. Driving too fast for the circumstances.
2. Applying brakes too fiercely. With certain exceptions (for example unseen oil), skids are blameworthy.
3. Failing to anticipate possible difficulties and danger.
4. Failing to give proper and adequate signals of intentions.
5. Failing to comply with the Highway Code.

Interview notes must be recorded on the investigation form, together with any corrective action or training prescribed. If the driver is found to be blameworthy, re-assessment or disciplinary action should be undertaken. All stages of the investigation must be recorded on the investigation form.

For smaller vehicle operators, more general driver handbooks are available. For example, Hertfordshire County Council's *Safe Driver Handbook* explains the legal requirements including the need to inform Police within 24 hours if there has been an injury accident.

It provides a form for recording on-the-spot information including room for the driver to sketch the scene. FTA van and lorry driver handbooks (1999) provide information on what to do at-scene. The van driver's handbook also provides a vehicle circle check and defect report and 'at-scene' bumpcard.

2.3.2 Post-accident investigation

RoSPA (1998) recommended that managers investigate accidents and near hits. Once a driver who has been involved in an accident gets back to the company site, information for company records has to be provided. Many companies simply present the driver with an accident form to fill in. Better data, however, can be obtained if one of the company's managers has responsibility for ensuring accuracy and consistency. This manager should interview the driver to determine causes, as soon as possible after the accident as recollections tend to fade with time.

Croner (1999b) recommended that this type of investigation should achieve the following:

1. Establish how and why the accident occurred.
2. Identify the corrective measures needed to prevent a similar accident.
3. Be part of an overall corporate risk management package to minimise financial loss.
4. Help assess liability issues for legal and insurance purposes.

Croner also recommended the following procedures:

- the company safety policy document should identify the procedures for investigating accidents;
- the safety policy should specify the official who must lead the investigation;
- all specified officials should receive relevant training and resources;
- investigation resources may include safety policy documentation, appropriate investigation checklists and report forms, workplace layout plans, relevant risk assessments, relevant safety procedures and rules, posters, signs and tape to cordon off areas, recording equipment for notes or interviews, photographic and measuring equipment;
- information should be obtained through interviews, inspections and requests for written statements. For major accidents, interviews should be recorded on video or audiotape;
- opinions of interviewees should be recorded, but should be made distinguishable from facts;
- inspection of relevant locations and equipment may be essential;
- a checklist may help the investigator to obtain relevant information;
- the sooner interviews are conducted, the more likely they are to yield facts rather than opinions;
- investigations should establish what happened, how, when and where, and the underlying causes/contributory factors;
- investigations should be followed up by a management report on the causes of the accident, to help inform what preventive action, if any, is necessary;
- the investigation team should include at least one workplace representative;

- on-site trained emergency stewards should know how to make an accident site safe before the accident investigator arrives, while preserving evidence as far as possible; and
- information given should be cross-checked and verified.

2.3.3 Post-accident risk management analysis

Most companies have information on previous accidents, largely in report forms kept for insurance purposes, although the data varies in both quality and depth, depending on the requirements of the company's insurers (Croner 1999a). By expanding on this data to develop an accident database, companies can analyse the data to pinpoint weaknesses and give managers the information on which to base training and other preventive methods. Murray and Whiteing (1995) support this. They stress that vehicle accident databases should monitor factors contributing to each accident's cause and severity and should include both insurance and non-insurance accidents. This information is fundamental in devising and implementing a strategy to reduce the accident risk.

A case study company set up an accident monitoring database, using information from insurance claims forms (Croner 1999a). The database contained the following information, which is typical of that found on most accident report forms:

- accident reference number;
- insurance claim number;
- claim;
- date of the accident;
- time of the accident;
- entry date;
- accident type;
- vehicle registration number;
- vehicle type;
- driver name;
- driver gender;
- driver age;
- depot name;
- blameworthy and non-blameworthy; and
- cost information.

For a fuller analysis, the database could have included the following information (Croner 1999a):

- manager or supervisor name;
- accident location;
- driver status and length of time in the company;
- driver shift details;
- more cost information;

Murray and Whiteing (1995) also included the following details:

- vehicle age;
- trailer registration number;
- trailer type;
- trailer age;
- tyre mileage (front, rear and trailers);
- odometer reading at time of accident;
- time or kilometres since last service;
- time of shift (X hours or kilometres from start of shift);
- hours driven by driver in past week;
- loaded or unloaded;
- weather conditions; and
- level (severity) of accident.

A balance has to be struck, however, as this level of detail may discourage drivers and managers from reporting their accidents. Many companies rely on their insurers (or brokers) to give them information on their accident record. This can provide an incomplete picture. In the case described (Croner 1999a), only a quarter of the accidents recorded in the database actually involved an insurance claim. One of the first management interventions necessary was to keep better and more standardised information in the database. Croner (1999a) states that best practice is to report, record and analyse all accidents, irrespective of their size, cost and who is seen as blameworthy.

2.4 Other company level issues

2.4.1 Defining an accident

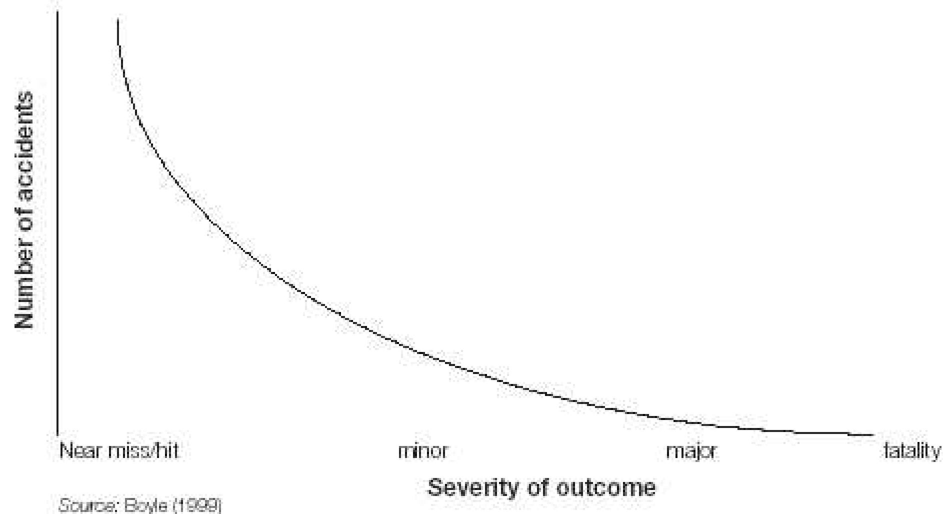
Defining a company vehicle accident is important. There is a great deal of debate about 'what is an accident' and whether accident is actually the correct word to use. Different groups and writers use a range of different words including accident, incident, crash and collision. Boyle (1999) suggested that the difference between an accident and incident is that accidents have a specific outcome such as damage or an injury, whilst incidents may not. He states the HSE definitions:

> "***Accident*** *includes any undesired circumstances that give rise to ill health or injury, damage to property, plant, products or the environment, production losses or increased liabilities."*
>
> "***Incident*** *includes all undesired circumstances and near hits that could cause accidents."*

Bateman, King and Lewis (1996) define an accident as an undesired event that results in harm to people, damage to property or process loss. They acknowledge that, in everyday usage, some people perceive differences between the meaning of accidents and incidents, restricting the use of the word accident to an event involving an injury to a person. They advocate the use of accident in all situations including property damage, process loss, injury and, notably, near hits. This was supported by Howarth (1999), who classed all vehicle damage in non-normal circumstances as accident damage. Superficial scratches, which do not affect vehicle operation, are considered as wear and tear, defined by the BVRLA guide (1997) in terms of what damage is reasonable when a hire vehicle is returned to a supplier. Lawrence (1999) also suggested that recording all accidents, however small, is vital in allowing the company to have records for potential future claims. He gives several definitions of minor accidents in this context, including those falling under the insurance excess and accidents not involving major third party damage or third party personal injury.

Clarifying these definitions is important. Although national data (RAGB 1999) concentrates mainly on major injury and fatality road accidents, Boyle (1999) suggested a relationship between the severity and frequency of accidents (Graph 2.1).

Graph 2.1 - Relationship between the severity and frequency of accidents



For example, five organisations in the oil, food, construction, health and transport industries found that, for every major or over three-day injury, there were 7 minor injuries and 189 non-injury accidents (www.med.ed.ac.uk/hew/occhyg/mon.htm).

According to Boyle, the relative numbers in this relationship are less important than the recognition that accidents range from near hit to fatality and that definitions, such as minor, three-day and major, are merely arbitrary points along this continuum. He showed past studies that have calculated the numbers of each accident classification dating back as far as the 1930s, but finds traditional 'accident triangle diagrams' misleading as, in certain circumstances, damage only accidents can be severe and costly.

RoSPA (1998) and Cooper (1998) both point to a direct relationship between small and large accidents. Cooper suggested that, for every 30 unsafe acts at work, there would be one lost time accident. RoSPA (1998) quotes statistics suggesting that for every 1,800 'damage only' traffic accidents, there are 1.6 driver or passenger fatalities. Whatever the exact relationship, the typical company vehicle accident involves slow speed manoeuvring, minimal 'damage only', relatively low repair costs, often at a collection or delivery point or other company or private address. As often as not, it goes unreported and is financed by general maintenance costs or the wear and tear bill. The problem is that, on a regular frequency, there is a major accident.

Further accident definitions are provided in RAGB (1999). A fatal injury involves a death within 30 days of the accident. A serious injury involves being retained overnight in hospital or any of the following: fractures, concussion, crushing, severe cuts, lacerations, severe whiplash or shock. A slight injury involves a sprain or minor cuts, shocks or minor whiplash.

RoSPA (1998) goes further, suggesting that a reporting procedure should be put in place for reporting significant near hits and non-compliance, with emphasis in training on how to recognise, analyse and learn from such events. An end-of-shift driver debrief may be the best mechanism for this process. Training should focus on the importance of accident reporting for risk management rather than for penalising those involved.

2.4.2 Accident causation

Many existing company vehicle accident reporting procedures do not tend to investigate underlying causes and, instead, concentrate on a code that describes a more general accident type, as shown above from Croner (1999a).

Specific research on vehicle accidents has provided several interesting results. Sabey and Taylor (1980) investigated 2,040 accidents and found the most important contributory factors:

- road user error in 95 per cent of cases;
- the nature of the road environment in 28 per cent of cases; and
- vehicle features in 8.5% of cases.

Further research, discussed in Croner (1999e), by McCorry and Murray (1993) showed that 70-90 per cent of a typical company's accidents occurred while vehicles are manoeuvring and Murray (1998b) showed that 25 per cent of accidents across 60 company fleets occurred when the vehicle was moving backwards. Other research, for example by Horne and Reyner (1996) and Taylor (1998), showed that factors, such as driver fatigue, employing temporary or agency staff, alcohol, drugs, and driver age, all have significant impacts on accident statistics.

Murray and Dubens (2000) suggest that the company culture and attitude of managers and supervisors significantly influences the risk of accidents. Pressure to complete tight time schedules increases the likelihood of accidents taking place. They concluded that management is vital in creating an accident-free culture. They saw recording and analysis of trends in accident data and using the information to make appropriate interventions, as vital steps in managing the risk of company vehicle accidents and provide the following framework for structuring the data:

1. Management or reference.
2. Driver.
3. Vehicle and property.
4. Accident.
5. Claims and insurance - including third party vehicle and property, injuries, witnesses, Police, administration and costs.

2.4.3 Trend analysis and key performance indicators

Nicholson (1985) and Boyle (1999) agree that continuous measurement of accident numbers allows comparison of performance over time. Accident ratios or key performance indicators (KPIs) are important in this process because companies operate at different levels of output over time. For example, they take on additional work, change their labour force, gain, lose or change contracts, and alter their methods of operation. The risks involved, and the potential for having accidents, will vary over time.

Boyle (1999) provided two commonly used measures. The first is a rate per 1,000 employees.

$$\text{Accident rate} = \frac{\text{Number of accidents x 1,000}}{\text{Number of employees}}$$

The second is the number of accidents per 100,000 hours worked. This method accounts for the amounts of work done and allows for part-time workers. In terms of this project, this performance indicator is particularly useful for including agency drivers.

$$\text{Frequency rate} = \frac{\text{Number of accidents x 100,000}}{\text{Number of hours worked}}$$

Murray and Dubens (2000) discussed KPIs specifically for transport safety (Table 2.1). Similar KPIs are shown later in Chapters 4 and 5. Such KPIs allow companies to benchmark their performance, both in and outside their organisation.

Table 2.1

KPIs for weekly, monthly, quarterly or six-monthly trend analysis

Site-by-site comparisons	**Accident rates**
Number of accidents	Accidents per £100,000 of turnover
Underlying causes	Accidents per 100,000 miles/kms
Types	Time to report (an important process issue)
Fault/non-fault	Unreported damage going through the maintenance budget
Locations	Specific issues, trends or problem areas
Vehicle types	Accidents per driver
Level of damage	Accidents per vehicle
Costs	Average accident cost
Dates	Driver shifts/months per accident (important for managing driver agencies)
Times	Kilometres/miles per accident
Repeat drivers	
Agency performance	

(Source: adapted from Murray and Dubens 2000)

2.4.4 Benchmarking

As far back as 1972 the Robens Report stated that various safety inspectorates need wide ranging statistical information to enable them to locate problems, identify priorities and plan their work. The value of the accident depends on its range, coverage and accuracy. The Health and Safety Commission (HSC) thus encourages employers to obtain as much accident information as possible to enable effective monitoring.

Benchmarking is a management tool that became increasingly popular during the late 1980s and early 1990s (Shetty 1993). In the USA Savage and Moses (1994, 1995) benchmarked accident statistics for goods vehicles using the Federal Highway Agency's national auditing database. They showed how the outputs of this work have fed into government agencies helping vehicle operators improve their safety and reduce costs through a programme of regular auditing. In Britain, however, nothing has been published on this subject and there is no similar database or specific agency for developing or undertaking such a programme. This is discussed further in the section below on the US.

Some attempt (for example Murray *et al* 1996, Murray 1997) has been made to benchmark the accident rates and reduction interventions of UK companies. Both these projects have been less than

satisfactory and identified major limitations in the data and information that vehicle operators collect, keep and have access to for analysis.

In the 1996 study, a benchmark pilot study of 18 companies was undertaken to compare accident rates. The findings showed that accident reporting and recording methods differed, making comparisons between companies difficult. Some companies recorded little information about accidents, only complying with the minimum data required by their insurers. It was found that most participants greatly underestimated the cost of their accidents.

A follow-up study by the University of Huddersfield surveyed 39 companies that had attended the University's 1997 programme of events on *'Reducing commercial vehicle accidents'* (Murray 1997). These companies collectively operated over 38,000 vehicles travelling about three billion kilometres per annum and recorded 23,500 accidents during 1996. It was found that nearly two-thirds of participants' accident reduction interventions had focused around drivers, but very few (18%) had focused specifically on management development.

The problems in attempting to benchmark company accident rates highlighted by both of these surveys were exacerbated by the fact that each company had different criteria for defining an accident and recorded different sets of data for those that were reported. On making comparisons of accident data Boyle (1999, p237) states that "the numbers employed or hours worked ... are used because we can measure them, rather than because they are good indicators of risk".

The type of operation must be taken into consideration. Multi-drop delivery and collection vehicles in urban areas will generally have more accidents than trunk vehicles operating mainly on motorways. Vehicles on fixed routes to regular delivery and collection points will generally have fewer accidents than those with variable routes, delivery and collection points. New start-up operations will normally have a higher accident rate than established ones.

Overall, however, these studies showed that there was significant scope for the participant companies to improve their accident reporting and recording and to use this information to develop management-based systems to prevent accidents.

Many fleet operators (see Linturn 1995a and b, Adamson 1997, Taylor and Clarke 1998, Weigand 1998) have become more aware about the public relations and cost benefits of managing safety more proactively and there is increasing focus on management liability for safety of employees. These examples show that there is some potential for accident reduction and all highlight the importance of accurate, detailed and comparable information as a tool for understanding and preventing accidents. Improving and standardising accident data collation is often the first intervention to be implemented when a fleet operator begins to focus on transport safety. Many individual organisations attempting to undertake such analysis have expressed a desire to be able to benchmark themselves against other similar operators.

At a recent RoSPA seminar on managing occupational road risk over half of the speakers (Bibbings 1998, Clinton 1998, Weigand 1998, Phillips 1998 and Murray 1998a) focused on the issue of data and the importance of recording it correctly. It was seen as a key starting point for developing accident reduction interventions for company vehicles as part of the process of managing occupational road risk.

2.4.5 Under-reporting

To Bateman, King and Lewis (1996) the value of good reporting and investigation procedures can be largely undermined if accidents are not reported. To minimise this, employees must be actively encouraged to report accidents of all magnitudes. Bateman *et al* (1996) listed five reasons for accidents not being reported:

1. Fear of discipline for themselves or others.
2. Personal image (macho) being damaged by admitting a minor accident.

3. Spoiling records (if you record all your accidents you will probably have a much higher accident rate than everyone else and will miss out on the accident-free bonus).
4. Concerns over bureaucracy and form filling (suggesting that the reporting process should be as easy as possible).
5. Not understanding that comprehensive reporting of minor accidents is a vital prevention tool.

They suggest five methods to encourage better reporting:

1. More severe disciplinary action for those 'found out' after the event than 'self reporters'.
2. Stress the value to others, as reporting can help prevent problems for workmates.
3. Use statistics positively, for example, show the ratio of major to minor, which improves with better reporting, or average cost per accident, which goes down.
4. Make forms easy to complete and show the system is working and improving.
5. Raise awareness through team briefings, posters, newsletters and prizes for quality reporting.

Boyle (1999) suggested three methods to check that accidents are actually being reported:

1. Interviewing the correct employees in an informal manner with the assurance that discipline will not be applied against them or any other individual will make them more likely to report.
2. Inspections of equipment and locations.
3. Cross-checking maintenance records against reported accidents.

2.4.6 Insurance issues

The relationship between insurance and accident reporting and recording is a strong one. RAGB (1999) showed a falling number of insurance claims in Britain in recent years. This is highly flawed in terms of company vehicle fleets, however, as an increasing number of large fleets are becoming self-insured and, hence, outside the above insurance claims data.

According to the Road Traffic Act 1988 and the Motor Vehicles (Compulsory Insurance) Regulations 1987 all road users must be covered by an insurance policy. Several types of cover exist, although all British motor insurance policies must provide cover against liability in all EU member and European non-member states, which can be withdrawn if vehicles are not kept in a roadworthy condition. Third party insurance limits cover to claims made by third parties, although this is often extended to provide cover against fire and theft. Comprehensive insurance provides additional cover against the cost of repairs caused by accidental damage to the covered vehicle (Croner 1999c).

The insurance industry in Britain is slowly moving towards an oligopoly, through mergers and acquisitions. Only a few large underwriters are still left in the market. These remaining insurers have become much more choosy about which fleet operators they will insure and more proactive in encouraging fleet operators to better manage their risks (Blanc 2000). Several insurers suggest that monitoring and recording of accidents could aid accident prevention in the future. To measure performance, written procedures on accident recording should be formulated and communicated to all drivers (for examples see CGU 1999 and Eagle Star 1995). They recommend the following principles:

- a clear and precise accident reporting system;
- the completion of both accident assessment and claims forms; and
- causes of accidents should be established through an interview between the risk management co-ordinator and the driver.

Insurance premiums have recently begun to increase after years of under-pricing (Lawrence 2000, Blanc 2000). There are many reasons for the rises, including increases in the number and size of

personal injury claims, a general hardening of the market after several years of fierce competition (Nash 1999) and the need for insurance to now cover hospital fees (Karis 1998).

Nash (1999) discussed the measures that insurers are taking to try to get companies to apply risk management techniques to road safety. Insurers and specialist brokers are keen to work with haulage firms and other fleets to try to identify weak areas and suggest improvements, such as driver training, in a bid to bring down claims. Brokers will look at the numbers of accidents, claim costs and liability for companies. They can analyse figures to establish if a particular driver is having a disproportionate number of accidents and the circumstances surrounding the accidents. Some insurers offer driver training courses and premium discounts to those who take up the offer. Brokers are divided in opinion as to whether this approach is cost effective, as many companies have a high turnover of drivers.

Nash recommended the following measures for managing accidents and insurance costs:

- select drivers properly, particularly if using agency drivers. Check licences and make sure they have an accident free record;
- develop a risk management strategy for driver training;
- monitor claims, preferably having all of them sent to one person in the company;
- set up a reward or penalty scheme for drivers; and
- ask insurers and brokers for quarterly management reports and recommended actions.

Rising costs have led to an increasing number of large fleets becoming self-insured and meeting the costs of their own accidents. Opinion on the ideal minimum size for a self insured fleet varies from 75-500 vehicles (Nash 1999). Martin (1999) explains that it would not be prudent to self-insure a small fleet because the risks cannot be spread widely enough.

Once fleet sizes reach 500-750 vehicles, most operators become self-insured. This involves the company setting aside a bond of £500,000 to fund the repairs of their own vehicles and pay third party claims. It is controlled by the Motor Vehicles (Third Party Risks Deposits) Regulations 1992 (Croner 1999c). An alternative form of self-insurance is to have a large policy excess, say £1 million, so that the insurer is only used to cover against exceptional calamity claims (Karis 1998). This can also protect them if their accident fund becomes exhausted, and is known as 'stop loss' insurance. An approach used is to set up a captive subsidiary company, to underwrite the risks, often in an offshore location such as Guernsey or Bermuda (Martin 1999).

Large fleets are well suited to self-insurance, for several reasons:

1. Losses are relatively predictable based on last year's claims history.
2. They do not have to pay premiums towards the insurance company's overheads and profits.
3. They can earn interest on the claims fund and retain any capital left over at the end of the year.
4. Disputes for repair costs to the company vehicles decrease, as the fleet handles its own claims.
5. The company has more data for risk management purposes which it can tailor as it sees fit.

Self-insurance is not without disadvantages and risks. Although interest is earned by the accident fund, this is likely to be less than the capital could achieve if it was invested elsewhere, additional skilled staff will need to be hired and the expertise of the previous insurers will be lost (*Fleet News,* July 1999). It is risky. One large claim can exhaust the whole fund, requiring extra money to be found from elsewhere. Many companies who are self-insured still use an insurer to cover such calamity claims. In addition, shareholders may prefer their money to be invested in something more productive. Finally, there is the temptation to use money from the fund when cash flow is tight.

Lawrence (1999) gives an excellent summary of insurance issues for company vehicle fleets, stating that insurance companies faced 5.7 million claims in 1997. Many of these were still outstanding for a

variety of reasons, particularly the time the legal process takes for the increasing number of personal injury claims, brought about in part by the introduction of the 'no win-no fee' legal system.

Lawrence suggested that most accident reports originate from the driver rather than an investigator. In geographically diverse organisations, it can be difficult to contact the driver for verification immediately after completion of the form. Lawrence believes that some accident report forms provide satisfactory drawings and accident details, but that few drivers actually admit it is their fault. This is often because insurance policy conditions usually prevent drivers admitting liability. It is important, however, to be honest with the insurance company from the start that the driver has admitted liability to their employer during the post-accident investigation. In reality, most third party claims paid by insurance companies do not involve any admission of liability. Like several of the participants in the project, Lawrence also saw fraudulent claims, particularly for personal injuries, as a growing problem. This makes good quality reporting and recording of accidents particularly important as part of the process of defending such claims.

2.4.7 Accident management companies

Some fleet operators have chosen to adopt a 'core process focus' and contract out their accident reporting, recording and claims to accident management companies (AMCs) (Lawrence 2000). Such companies offer a comprehensive service, including a telephone helpline, from the moment the accident occurs until any repair work is completed and the vehicle back in service. They often use the latest techniques, such as remote imaging systems for vehicle inspections, to minimise repair costs and keep uninsured losses to a minimum. This is a particularly common option for company car and van fleets.

Typically, drivers are given a freephone 24/7 number to report accidents when they occur. The call to an operator generates a standard report/claim form. The operator enters details of the accident circumstances, vehicle damage, third parties and any injuries directly onto the accident management system, based on the driver's description over the phone. Within

24 hours the form is sent to the driver with a pre-addressed return envelope to be checked, signed and a sketch added.

If the form is not signed and returned within seven days, AMCs chase the form until they receive it. Risk management information is provided, for example on the KPIs below, both at agreed periodic intervals (typically six-monthly) and on an ad hoc basis:

- accident frequency;
- accident category analysis;
- accident cause analysis;
- fault analysis;
- divisional/site comparisons;
- repeat offenders;
- age profile - numbers and average costs;
- vehicle use analysis;
- vehicle manufacturer analysis;
- accident costs;
- uninsured losses/recoveries;
- time to report;

- accident locations; and
- vehicle downtime.

Gillingwater (2000) summarised the growth and role of accident management companies. He quoted figures from a recent survey of the fleet operations of 50 FTSE100 companies. Two-thirds of the companies questioned used an AMC, with 25 per cent of respondents outsourcing to one major supplier. He concluded with a 'wish list' of services that an AMC should provide:

- assessment of current risks and insurance status;
- 24/7 call centre and help with report form completion;
- vehicle damage inspections;
- claims handling; and
- on-going risk management advice and reports.

AMCs play an increasingly important role in the accident reporting and recording process and should be included in this study and further projects.

2.4.8 Woolf Reforms

Gillingwater (2000) discussed the Woolf Reforms of the British civil justice system, which is having an effect, particularly on speeding up the accident reporting and recording process. Introduced in April 2000, the reforms set out to minimise the costs, delays and complexities of the legal system. Maslen (1999) suggested that these changes have significantly reformed the legal process for making insurance claims, particularly in three areas:

1. Once a claim letter has been received, receipt of the letter must be acknowledged within 21 days.
2. Insurers have 14 days to make any objections they may have about the claim.
3. Insurers then have 3 months to carry out a full investigation, confirm or deny liability and decide whether they intend to contest the claim.

In summary, the Woolf Reforms mean that parties involved in legal proceedings are now encouraged to settle cases without the need for lengthy litigation. Maslen (1999) provided the following reporting and recording action plans for drivers and managers:

Drivers

- Do not admit liability.
- Report all accidents to a manager immediately.
- Take full details at the accident scene, including witnesses, diagrams and photographs.

Managers

- Investigate all accidents immediately, even if no claim is involved.
- Maintain a comprehensive and up-to-date system for filing accidents (including report forms, all correspondence, photographs, details of extent and location of vehicle damage, MOT certificates and maintenance records).
- Train drivers in the importance of taking full details in the event of an accident and reporting it to the relevant manager immediately, and the procedures for doing so.
- Admit liability quickly if the evidence suggests that their driver is at fault.

- Have ready access to all relevant documentation for up to three years after an accident (the time period in which a claim can be made).
- Produce driver handbooks that include sections covering what to do in the event of an accident.

Overall, this means that accident reporting and recording should improve as a result of the Woolf Reforms. It is in vehicle operators' interests to ensure that all accidents are immediately reported and fully investigated. Maslen concluded by discussing accident packs, which are increasingly common and typically include a disposable camera, a pen and an accident report form.

2.5 International experience and comparisons

2.5.1 Europe

When a vehicle from a UK-based fleet travels in Europe, the driver would normally follow the organisation's existing reporting and recording procedures. Within the EU, however, the insurance requirements of countries vary and many insurers and fleet managers issue a European Accident Statement to drivers taking vehicles to the continent. Although its completion is not compulsory, the form is designed to elicit the facts about a motor accident to help insurers to settle claims quickly and fairly. Its style is visual to try to minimise misunderstandings of language. This acts as a comprehensive combined 'bumpcard', exchange of details sheet and accident report form. It includes a diagrammatic description of an accident and is useful in determining liability. It is also useful to collect third party details at the scene.

Typical UK fleets whose vehicles travel in Europe have a supply of these forms and when someone goes abroad and requests a Green Card from the fleet or transport manager, would receive such a form with it. As indicated above, there is no legal requirement to have the form, but it is useful and is typically used alongside the accident report form sent to the insurer or claims manager.

On the reverse of the Green Card are a list of agents representing insurers who will deal with claims against a foreign driver if no response is received direct from the insurer and/or the third party is unaware of who his insurers are. For example, if a UK driver was involved in an accident in Germany, but did not give the German driver any insurance details, the German insurer would write to the Motor Insurance Bureau (MIB) in Milton Keynes, who are the agents for the UK. The MIB would then take up the enquiry on behalf of the German insurer, by writing to the UK driver and requesting his insurers details and give that information to the German insurer, to then write to the UK insurer.

It is normal for all UK insurers who are issuing policies for use abroad to have an agent in the overseas country to act on their behalf. In essence, they would be a claims handling bureau versed in the insurance laws of that country and have a delegated authority to deal with the claim on behalf of the UK insurers.

Under the EU's Fourth Directive, legislation is now in force for insurers to provide information to a central source known as the Motor Insurance Database (MID) (*Fleet News* 2002). Insurers and/or fleet managers must provide details of the vehicles they cover by registration number, make, model and policy details and update any changes within 14 days. The MID went live for private vehicles in July 2001 and the extension to include fleet and motor trade vehicles will start in January 2003. The purpose of the database is to assist the authorities in quickly identifying uninsured drivers. The Police will be able to type in a registration number and it will quickly identify who the insurer is for that vehicle or that it is uninsured[2].

2.5.2 Australia

In Australia, many initiatives occur at the state level rather than nationally. For example, in Queensland the Motor Accident Insurance Commission (MAIC) manages a compulsory third party

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[2] For more information see: www.miic.org.uk/phase2/policyholder and www.ensign-insurance.com

motor vehicle insurance scheme through a small number of preferred insurers. Established under the Motor Accident Insurance Act in September 1994, MAIC is funded by a statutory levy within the compulsory third party premium, which is paid as part of the vehicle registration process.

There is no direct reporting mechanism to the MAIC. When an accident occurs involving personal injury, a claim is made with the relevant insurer. Usually vehicle crashes are also reported to the Police and are called Traffic Incident Reports. Insurers verify these reports. Eventually the insurers provide data about claims to MAIC.

MAIC monitors activities through the examination of this claims data. It monitors developments in claim reporting and settlements and inputs the information into the premium setting process and legislative framework. The MAIC claims register and statistical database can identify some, but not all, work vehicles and can provide information that is very useful for risk management. It promotes measures to eliminate or reduce the causes of motor vehicle accidents and mitigate their results by using some of its income to fund rehabilitation and accident prevention research programmes at Queensland University of Technology. There is no similar body in Britain. Company vehicle accidents and reporting systems are not an area of direct MAIC responsibility, but taxis and certain city buses have recently been identified as high risks based on the MAIC data. The MAIC has then used its support, data and influence to leverage safety and risk management programmes in these fleets. Similar compulsory insurance schemes are in operation in all the Australian States and Territories.

Queensland Transport, similar to the DfT but at State level is proactive in fleet safety. It found that fleet operators were not keeping very good records on crashes. Even where they were doing so, many were not analysing the information to look for any trends (Anderson, 1999). A number of the major insurance companies have developed databases for fleet operators and make these available, free of charge, to their clients. Currently, there is no standard accident report form or system in place for all organisations.

Since 1997, Queensland Transport (which produces RAGB-type accident statistics for Queensland in their *Road Traffic Crashes in Queensland* document, and in reports called Queensland *Road Toll Monthly Status Report*) has collected information on reportable crashes involving commercial vehicles. This information is taken from Police reports and entered into its crash database. It includes causation and purpose of journey information, and attempts to evaluate the impact of different road safety interventions. Approximately 16% of road crash hospitalisations and 25% of fatalities in Queensland involve a work vehicle (Meers 2001). Like the DfT, however, Queensland Transport does not have much information on the crash reporting and recording of individual organisations.

Partly for this reason, Queensland Transport (1999a) has produced a workplace fleet safety self-audit to help develop best practice and a workbook (1996b) to accompany it. Section 5 covers the maintenance of an efficient system of recording and monitoring fleet, driver and vehicle crash involvement. To learn from their past and improve in the future organisations must have systems in place to record accidents, look for patterns and determine corrective actions.

Drivers need to be informed of the action to take in the event of an accident. They may be in a distressed state so instructions should be simple and kept in vehicles for easy access. The process for reporting accidents must be explained to new employees during induction. Procedures should be regularly explained at workplace health and safety or staff meetings.

Police and insurance companies may investigate accidents but their main motive is to establish responsibility. Organisations can benefit from gathering data about why an accident happened and what could have been done to avoid it. This information can be used to determine training needs and what can be done to decrease the chances of it happening in the future.

If investigations are to be carried out in a constructive manner and the organisation prefers to do them internally the relevant people involved need to be properly trained. Where accidents are investigated, a report should be prepared for management's approval containing a list of any recommendations,

persons responsible for implementing the recommendations and a deadline to complete any action required.

Organisations should identify what data to collect and how they are to be collated (for example through a computerised database or a paper-based system). Standard forms can be created to aid data collection. The purpose of the exercise is not just to collect data, but to have information to assist in making informed decisions.

This data also enables an organisation to measure performance against best practice and strive to improve accordingly. Benchmarking can occur against internal operations to identify and adopt best practice, or against external organisations that are perceived as leaders in fleet safety. Once best practice organisations have been identified, other organisations are able to adopt their best practice and import the relevant aspects to their organisation.

This is a very thorough self-audit system. The take-up rate for the self-audit books has been good with over 300 organisations making requests. Feedback received so far from fleet operators who are not implementing it is that they have other priorities or do not have the human resources to proceed.

2.5.3 United States of America

In the US, there is a range of federal and state regulation (Schmidt 1996). Transport researchers Savage and Moses (1994, 1995) have consistently found that firms with the best safety records utilise comprehensive accident data. Their research was based heavily on Federal Highways Agency databases. There also appear to be a range of state, organisation and insurer-led initiatives in the US.

Savage and Moses (1994) explored the relationship between truck firm characteristics and accident rates. They concluded that the firms with the best safety records are those which keep records of accidents and investigate accidents to determine if disciplinary or educational action is necessary for the drivers involved. They concluded that American motor carriers could improve their accident rates by an average of 43 per cent. It should be noted, however, that these were firms targeted for their previous poor accident records for 'enforcement and education action'.

In another study, Savage and Moses (1995) evaluated the effectiveness of two government programmes to collect data to identify unsafe interstate trucking companies. The first audited safety management practices within firms. The second undertook a series of driver and vehicle roadside inspections. Audits provided a benefit ratio of 4:1, against a ratio of 1.5:1 for the inspections. They recommended that the federal government should use indicators such as the audit and inspection results to identify firms with deficient safety practices, rather than relying on accident data that could be misleading.

In this audit process (see www.fmcsa.dot.gov/rulesregs/fmcsr/regs/385appb.htm), inspectors undertake a two- to three-hour visit to companies and interview managers with a list of 75 'yes or no' questions and add notes where necessary. The questions are grouped into nine categories. The companies are rated as 'satisfactory', 'conditional', or 'unsatisfactory' in each of the nine areas and a final rating score is provided.

If a firm is unsatisfactory, a return visit 'Compliance Review' occurs. These are much more detailed than the original visit, taking 28 staff hours. The inspectors re-evaluate the company to determine if any legal enforcement is necessary and collect evidence to support any action. Failing firms can be fined, and in the worst cases, banned from operating. More recently, the US Department of Transport (DOT) has used a 'SafeStat' measure that combines audit questions, roadside inspections, tickets given to drivers and crashes (Savage 2000). Its internet site (www.fmcsa.dot.gov) explains how it is calculated.

In most states accident data records collected by the Police are computerised and a state crash file maintained. This gives the basic information necessary for developing effective highway and traffic safety programmes. The lack of uniformity, different reporting requirements and dissimilar crash data elements between, and sometimes within, states makes the use and accurate comparison of data

difficult. This means that states cannot benchmark themselves against each other and find it difficult to decide upon and adopt best practice systems. Currently, no minimum criteria for recording accident information or guidelines exist.

A good state level example is West Virginia, where the Traffic Engineering Division codes and enters accident data, providing a central resource for the use of state and local agencies.

A variety of accident data, including casualties, costs, rates of accident, location, accident circumstances, type of accident and engineering details are computer-generated and available. The West Virginia Crash Data Report is also produced.

2.5.4 New Zealand

Most companies in New Zealand report motor vehicle accidents through insurance company forms. These forms are quite basic, recording a minimum of details for insurance purposes. Some large companies, such as Shell, have their own in-house forms, but many do not. Overall, there is no national standardised system in use.

New Zealand legislation requires the reporting of motor vehicle accidents to the Police, particularly if injury or third party damage occurs. The New Zealand Police have a standard accident reporting form for recording and prosecution purposes. Other occupational and environmental regulations require the reporting of accidents if there is injury in the workplace or damage to the environment. Vehicles on the road are classed as part of the workplace.

2.6 Summary of key findings from the literature review

From this material several conclusions can be made for best practice company vehicle accident reporting and recording:

1. **Current British data (for example RAGB 1999) cannot identify or quantify the extent of at-work RTAs.** Many company vehicle accidents are relatively minor, involving damage only, often at slow speed, frequently involving only one vehicle. This type of accident falls outside the current national level recording systems and is largely overlooked, even though many writers point to a link between this type of accident, injuries and fatalities.

2. **Improvements in safety performance have been made in other industry sectors, particularly through the involvement of and regulation by the HSE.** Until now on-road transport and occupational driving has not been covered by the HSE. There are growing calls (particularly from RoSPA) for this to change. It is felt that, if attention is focused on company vehicles on the road, similar improvements could be made.

3. **Legal, particularly claims and insurance, requirements currently drive accident reporting and recording** and systems often focus on claim and cost minimisation rather than risk management and investigation of the underlying causes of accidents. Self-insurance is a growing trend for large fleets, making aggregated insurance data misrepresentative of the full picture. There also appears to be a high level of underreporting of accidents at the company level, for a variety of reasons. Managers are likely to be required to give more attention to accident reporting and recording because of the increasing costs of insuring vehicles and the requirements of the Woolf Reforms. A great deal of best practice already exists but there is currently no standard even though the Woolf Reforms may improve and speed up the reporting and claims process and should make companies more systematic about accident reporting and recording, particularly where personal injuries are involved.

4. **Pre-accident initiatives**, particularly driver induction, training, handbooks and accident packs (including a camera), are important and should cover accident reporting and recording. Drivers must be well briefed on what to do at-scene and how to report the accident. This is developed further in Chapter 3.

5. **Post-accident, it is important for managers to undertake an investigation to identify underlying causes and remedial actions.** Post-accident risk management is also important and a range of KPIs have been identified from the work of Boyle (1999), Murray and Dubens (2000), Wright (1997) and Queensland Transport (1999). KPIs can be used for trend analysis and benchmarking the performance of different operations. There are problems with these, however, due to a lack of common standards.

6. **AMCs have grown rapidly** and are beneficial because they focus on this area specifically, allow clients a 'core process focus', can give economies of scale, and have data from a wide range of clients. They do have some limitations, however, which are considered further in Chapter 3.

7. International case studies suggest that more could be done to improve accident reporting and recording in the UK. **Safety audits, both compulsory and voluntary, have been used in other countries to help understand and improve company vehicle safety issues.** This approach could offer safety benefits in the UK context.

- From the US, the work of Savage and Moses (1994, 1995) suggests that compulsory safety auditing and helping companies to improve has been highly successful.

- In Queensland, voluntary safety audits have been implemented and, although in their early stages, offer some potential. They have a centrally controlled, levied, compulsory third party insurance scheme, which provides everyone with a minimum level of insurance, a minimum data standard and funding for rehabilitation, research and risk management programmes.

Chapter 3 - Review of existing systems

3.1 Introduction

This chapter reviews the current accident reporting and recording systems in a range of organisations. A database of potential participants was developed from University of Huddersfield and Brake contacts. In total, 560 individual managers from more than 340 organisations were initially included. All were invited to submit an accident report form and join the project by attending one of six regional meetings. In total, 92 organisations responded. Over 80 organisations provided a copy of their report form, over 50 managers attended a project discussion meeting and of these 38 participants responded to the project questionnaire.

3.2 Analysis of report forms

Forms from 80 organisations were analysed to assess their content, quality, length, structure, coding, influences and origins. Nine further forms, received after this analysis, were not included but were subsequently used in the project wherever they could add value. The information from the 80 report forms fitted loosely into Murray and Dubens' (2000) ten sub-groups shown in Table 3.1.

Table 3.1

Structure for the fields in the report form database

Sub-section title	Number of information fields
1. Management reference information	11
2. Driver information	22
3. Vehicle and property information	25
4. Accident information	21
5. Third party vehicle, claims and insurance information	9
6. Third party property (immobile)	2
7. Injuries	5
8. Witnesses	1
9. Police details	5
10. Administration, claims, insurance and costs	5

Each of these information fields, such as *'driver name', 'accident type'* and *'accident location'* was recorded in a present/not present manner to show how many pieces of information were included in each of the 80 forms, along with a more qualitative rating very poor, poor, average, above average, good or very good) being applied by the research team. Some descriptive comments, including any sections of the form deemed to be best practice or unusual, were also recorded. Much more detail about this analysis is available on request from the authors of the report.

Over half the forms were provided by specialist transport operators. Another quarter came from retailers and manufacturers. Local authorities, the armed forces, a building society, a fire service and a recycler provided the others.

Many of the accident report forms were clearly influenced and, in some cases branded, by insurers and brokers. This suggested that several relevant insurance questions should be addressed by the project.

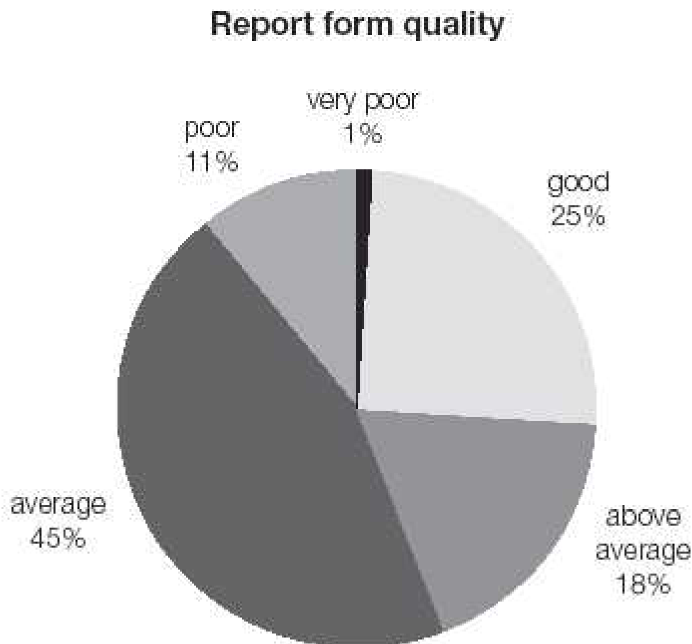
- How important is the insurer in deciding what information is reported and how it is used?
- What happens to accidents not reported to the insurers, for example, minor damage with repair costs below the policy excess?
- To what extent should insurers, brokers and accident management companies be encouraged to develop common standards?

3.2.1 Key findings from the report form analysis

Analysis of the report forms identified a range of key findings.

1. **There are currently no standards or conventions.** Operators often say that the process is dictated by insurance, whilst insurers say they respond to client need. What is clear is that accident reporting and recording systems, and obtaining relevant risk management information, are intrinsically linked with insurance and claims management. The CoVIR system will need to be able to deal with insurance and claims issues, including fire and theft, unless companies will be expected to run two separate systems.
2. **The primary purpose of many of the accident report forms reviewed appears to be to make or prevent a successful insurance claim,** with questions geared towards establishing liability and mitigating circumstances rather than the causes of accidents. Much of the information on these forms is for use by claims handlers and relates to damage, costs, witnesses and injuries. If any extra accident information is included, its aim is often to establish liability away from the company driver.
3. Graph 3.1 shows the **quality of the forms** based on an assessment of their content and usefulness for risk management analysis. Each of the 80 forms analysed was assigned a rating. 'Poor' forms have very bare claims information. 'Average' forms contain the basic information to make a claim. 'Above average' forms contain claims information plus additional information about the circumstances of the accident. 'Good' accident report forms contain several innovative aspects that are deemed best practice and are worthy of particular attention when designing the accident reporting and recording process.

Graph 3.1 - The quality of the report forms



4. The length of the 80 report forms varied from one to six pages of A4. Most forms were two pages. The data includes the claim/report form but excludes any minor damage and investigation forms. The consensus from the meetings was that **forms should be as short as possible to ensure a high completion rate by drivers.**
5. Approximately half of the forms were branded, or clearly influenced, by insurers. Many of the non-insurance forms have strengths in certain areas, tending to be tailored to particular operational issues. The report form is only one part of the whole process. There are several other relevant forms, including the **bumpcard to be completed by the driver at-scene and the accident investigation form to be completed by the manager on return to the depot.** In some cases the investigation form is included as part of the report form completed by the driver. Typical accident reporting and recording documents are shown in Table 3.2 and there is more discussion about bumpcards and investigation forms in Chapter 3.2.2.

Table 3.2

Accident reporting and recording documents
Driver induction form
Driver handbook
Depot procedures manual and reporting instructions
Vehicle circle check form and defect report
Pocketbook
Store delivery guidelines
Vehicle or driver camera
Scene of accident instructions sheet, bumpcard or at-scene report
Separate claim, injury and minor accident forms

Combined report and investigation form

Investigation form

Accident book

Post-accident tachograph

6. The extent and quality of coding varied. **Many forms did not have a great deal of coding, which makes them very difficult to analyse. Those that did have a coding system did not appear to be working to any obvious standards - with the exception of the bus industry, where there appears to be more common ground.** Developing such a system will be necessary. Some companies include their coding on the form; others code the data later from a coding sheet or as part of the investigation. Almost without exception the forms include a driver's sketch, however, the quality of these varies tremendously. Some forms provide very little space and have no instruction other than 'Driver's sketch of accident here'. Others give a full side of A4, pre-printed pictures and precise instructions to include road names, signs and markings, direction of travel, points of impact and resting positions. A best practice drivers' accident report form should allow drivers to describe what happened in their own words and draw a sketch, whilst the manager's investigation form should be more based on verifying and coding the drivers information for analysis and risk management.

7. Participants have widely varying procedures in operation. For example, from the report forms submitted it was clear that over ten participants have separate major and minor accident forms (for example, one for claims and one for minor damage under the insurance excess/non-injury accidents). Thirteen participants submitted post-accident investigation forms with the report form. Eighteen participants submitted bumpcards and one supplied a copy of the pages from their accident book. Several participants also encouraged drivers to take photographs.

8. The participants' forms all have slightly different structures making it difficult to develop an exact summary of the key sub-headings on the forms, but, typically these include **(1) vehicle, (2) driver, (3) accident, (4) sketch/description, (5) third party vehicle/property, (6) injuries, (7) Police, (8) witnesses, and (9) claims/office use.** The ten-point structure used in this report is quite general and most of the forms analysed, whilst having a similar structure and much commonality of information, did not exactly fit into it. Table 3.3 shows the structure of TNT's report form used as a typical example in comparison with the structure of the Stats19 and Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) forms.

Table 3.3

Comparison of structure of TNT, Stats19 and RIDDOR forms

TNT	**Stats19**	**RIDDOR**
Accident reference	Accident circumstances	Organisation details
TNT vehicle and driver	Vehicle record	Accident details
Damage to other vehicle/property	Casualty record	Injured person
Accident details	Precipitating factors (sometimes)	Injury type
Accident description	Causation factors (sometimes)	Accident type
Accident sketch		Dangerous occurrences
Who is to blame		Description
Injuries		Signature

Witnesses

Signatures

9. The company forms and data collection processes were compared with Stats19. The main difference is that Stats19 only includes on-road accidents that the Police hear about and deem important enough to complete a report form for - typically injuries and all fatalities. As Table 3.3 shows, it covers the accident circumstances, vehicles, casualties and sometimes the causes. The Police, local authorities and Department for Transport (DfT) collate the information. Most accidents involving company vehicles are minor, often only involving one vehicle, and about half are off-road (covered by RIDDOR, not Stats19). Some of the Stats19 and company codes are similar, and others not, particularly accident types/circumstances. As the TNT example in Table 3.3 shows, company forms tend to be more geared to liability, claims and insurance and, sometimes, risk management. The information is collated by some combination of the company's operations managers and claims department, insurer, broker or accident management company, but is rarely recorded in Stats19. This is supported by Table 3.12, which shows that less than 15 per cent of participants' accidents were reported to the Police.
10. The company forms and data collection process were also compared with RIDDOR, which deals mainly with on-site injuries and dangerous occurrences where more than three days of work time are lost. Again, in Table 3.3 there is some overlap but also some differences. The information is normally collated by company health and safety managers and submitted to the Health and Safety Executive (HSE). It is not known what proportion of off-road vehicle accidents are reported and recorded under RIDDOR. The Work-related Road Safety Task Group (www.hse.gov.uk/road/index.htm) has since recommended that on road vehicle accidents should be included in the RIDDOR system at its next review.
11. **An integrated relational database, linked to a vehicle and driver database, would help companies with the recording of the data because much of it is of a repetitive nature.** Operational factors, particularly high staff turnover, use of temporary labour and seasonality, will determine how practical this is. There may also be data protection issues.

3.2.2 Bumpcards, accident investigation forms and photographs

Eighteen participants used **'bumpcards'** for the driver to complete at-scene. Bumpcards are generally A5 or less in size and range from two to four sides. They are particularly important for allowing timely and accurate information to be captured at-scene and for exchanging details with third parties.

Typically, they include company and driver details, third party details and an accident description. A tear-off slip allows information, such as who to contact to make a claim, to be handed to third parties. They also sometimes include instructions for the driver on how to manage the scene and what to do. The most sophisticated bumpcards appear to be from participants who are self-insured and attempt to minimise claims payouts to third parties. The bumpcard can also be used in court to show that third parties were given information but did not act upon it.

Thirteen participants also provided **accident investigation forms.** Sometimes these were part of the report form but in most cases were separate. Their content ranged from repeating everything on the accident report form, allowing managers to verify the driver's information, to the more typical one-sided form. Table 3.4 summarises the contents in the order that it tended to appear on ten different participant investigation forms, many of which appeared to be based on the TNT form after Adamson (1997) presented it at a conference. It includes details about the accident, the interviewer, action to be taken and the allocation of an accident type code to the accident. Accident investigation forms are particularly important to ensure that managers interview the driver to verify their information. The form is also important for identifying any underlying causes, allocating relevant codes, such as accident type, and for establishing the extent to which the driver was at fault for the accident. As well as the accident report form and bumpcard, an accident investigation form will also be developed as part of the reporting and recording system in Chapter 4.

Table 3.4

Summary of the content of ten accident investigation forms

Information	**Forms recording (of 10)**
Depot/site	10
Vehicle	9
Claim reference	8
Date of accident	9
Time	5
Name of driver	10
Admits responsible	5
Tachograph check undertaken (Y/N)	3
Interviewed by	7
Position	7
Date of interview	8
Place	4
Blameworthy (Y/N)	7
Cause code	7
Cause	8
Camera (Y/N)	1
Bumpcard	1
Previous accident record	4
Action required	8
Signed	9
Date	9
Copy to assessor	2

Several of the more proactive participants stressed the importance of **photographs** in the reporting process. Although this was beyond the scope and budget of the project to provide them to pilot participants, it is worthy of more discussion.

- Typically, either the vehicle or driver is issued with a camera. Drivers should be trained and encouraged to use the camera provided to take photographs discreetly of the accident scene and surrounding area (number plates, damage to all vehicles, vehicles in impact position, skids, road markings and signposts) to supplement their written and verbal reports.
- The main problems are the non-reporting of damage to, or theft of, the cameras, and drivers not using the camera very well or forgetting to take pictures. Even in organisations where there is only a 25 per cent use rate, however, issuing cameras can still be highly cost effective.

- Where they are available, photographs can confirm driver and third party evidence, help to reduce the cost of insurance by preventing extra large and excessive third party claims and allowing claims to be processed quicker and more accurately, which cuts down on hire charges for vehicle downtime. Photographs should be an integral part of the accident report form and reporting process.
- Cameras are also useful for photographing problem sites. These photographs can then be used for training purposes and in the development of delivery guidelines for drivers, and in some cases as a defence against third party claims.

3.3 Project discussion meetings

At the proposal stage, it was planned to undertake participant visits to interview individual managers on the nature and scope of their existing systems. The extensive interest in the project, however, meant that this would have been impossible, so project discussion meetings were organised. Over 50 people attended the six regional meetings held in Bedford, Huddersfield, London, Carlisle and Milton Keynes. Table 3.5 shows that staff from a wide range of organisation types attended the meetings. The last two columns indicate whether the organisation also submitted a report form and questionnaire to the project.

Table 3.5 shows the wide range of job titles of the managers responsible for vehicle accident reporting and recording in the participant organisations. There does not appear to be a set pattern as to who is responsible for accident reporting and recording. A range of different managers appear to have responsibility, all of whom have different agendas, attitudes, approaches, norms, languages and priorities. Table 3.5 also shows the approximate numbers of vehicles and annual number of accidents they have. These are not meant to be benchmark figures because of the different levels and types of accidents that organisations monitor. They are indicative of the scale of the organisations in the project and the numbers of accidents or claims that they are involved in each year.

Table 3.5

Table 3.5

Meeting participants

Job	Organisation type	Vehicles	Accidents	Accidents per vehicle	Report form	Questionnaire
Risk manager	Bus operator	1,000	1,600	1.6	YES	YES
Claims section manager	Transport company	35,000	18,000	0.5	YES	YES
H, S and E manager	Transport company				YES	
Statistics development officer	Accident management	75,000	60,000	0.8		
Traffic officer	Transport company	3,500	3,000	0.9	YES	
Fleet engineer/ commercial manager	Transport company	850	580	0.7	YES	YES
Administration manager	Accident management		100,000		YES	
Director of Safety	Transport company				YES	
Operations support manager	Transport company	1,600	1,000	0.6	YES	YES
Partner	Trainer	20	4	0.2	YES	
Divisional safety manager	Retailer	50	120	2.4		YES
Executive director	Road safety organisation					
Accident manager	Utility	5,100	1,900	0.4		YES
Data manager	Utility				YES	
Group risk manager	Transport company	200	200	1	YES	YES
Risk management executive	Insurance				YES	YES
Managing director	Driver agency				YES	YES
Quality training manager	Driver agency					
Fleet administration manager	Transport company	50	115	2.3	YES	YES
Transport operations manager	Transport company					
Motor risk manager	Insurance				YES	
Fleet risk consultant	Insurance					
Placement student	Transport company	160	470	2.9		
Delivery support manager	Transport company				YES	YES
Group risk manager	Transport company	120	70	0.6		YES
Commercial director	Trainer					
Managing director	Transport company	15	4	0.3	YES	YES
Captain	Armed forces	70,000	9,500	0.1	YES	YES
Loss prevention manager	Transport company	850	650	0.8	YES	YES
Road safety officer	Local council				YES	
Research programme manager	Government agency					
Health and safety manager	Manufacturer	55	39	0.7		
Transport operations manager	Manufacturer					YES
Risk manager	Bus operator	800	2,300	2.9	YES	YES
IT manager	Transport company	20	15	0.8		YES
Project manager	Trainer	95	10	0.1	YES	YES
Health and safety co-ordinator	Transport company	1,440	1,500	1.0	YES	YES
Motor-claims co-ordinator	Transport company					
Claims manager	Transport company	7,200	6,000	0.8	YES	YES
Claims negotiator	Accident management				YES	YES

continued

Table 3.5 (continued)

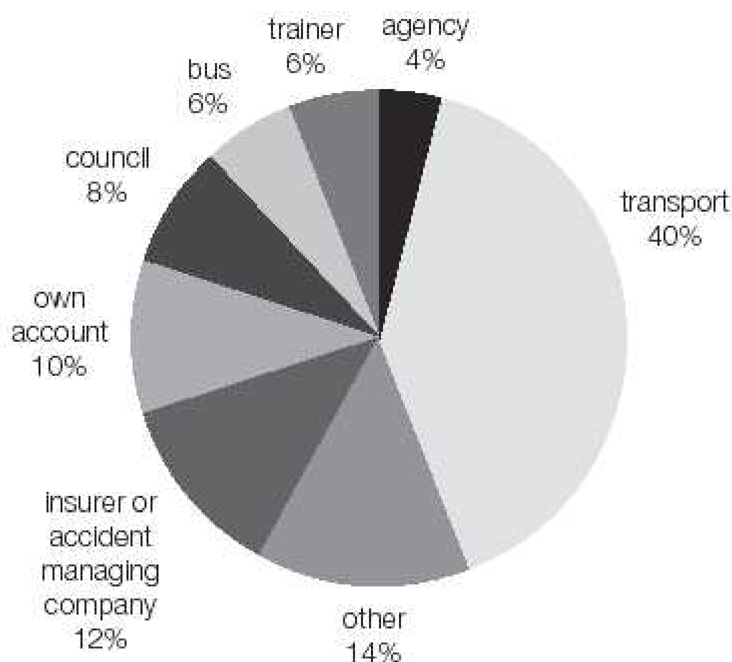
Table 3.5 *(continued)*

Meeting participants						
Road safety officer	Local council	3,600		0.0		YES
Management trainee	Transport company	16	50	3.1	YES	YES
Transport engineer	Utility	800	450	0.6	YES	YES
Fleet engineer	Fire service	80	80	1.0	YES	
Quality and safety manager	Paper recycling	100	200	2.0	YES	YES
Operations director	Paper recycling					
Financial director	Bus operator	450	1,200	2.7	YES	YES
Operations manager	Driver agency	125	60	0.5	YES	YES
Senior transport section manager	Transport company	50	130	2.6	YES	
Transport supervisor	Transport company					
Loss management executive	Insurance				YES	YES
Plant and transport engineer	Local council	310	350	1.1	YES	YES
Risk manager	Local council					
Safety manager	Transport company	270	175	0.6	YES	YES
Risk manager	Transport company	5,250	4,500	0.9	YES	YES
Project manager	Transport company					
Fleet manager	Local council	200	200	1.0	YES	YES
Managing director	Safety product supplier					
Total		214,576	214,472	1.0		

3.3.1 Key findings from the meetings

1. The organisation types shown in Table 3.5 are summarised in Graph 3.2. Some participants were 'following the company line' very carefully and away from the 'conference table' were more forthright. Other limitations of the meetings were that a few participants were clearly there for sales/PR purposes and the tone of the meeting was sometimes set by what the first speaker said or what the speakers thought the researchers 'wanted to hear'. Notwithstanding, **the meetings provided a rich and detailed insight into company vehicle accident reporting and recording.**

Graph 3.2 - Meeting participant types



2. Definitions of accidents/incidents vary and a project definition must be agreed on. Incidents were referred to by participants as both near hits and off-road accidents. Participants generally agreed that near hits were actually better defined as 'near hits'. Participants were unsure over when 'fair wear and tear' becomes an accident and whether wear and tear, minor accidents and unreported damage should be counted as accidents. Currently, most property damage and personal injuries (PI) appear to be reported by participants, but unreported vehicle damage often goes directly to the maintenance budget. Examples of what participants count include: all accidents, accidents costing over £x, blameworthy accidents only, and off-site accidents only. Overall, participants felt that best practice is to record everything. Some operators, however, find this impractical for cost and staffing reasons and are repeatedly involved in small accidents that are never reported. For this reason the project's accident definition includes **'any contact or alleged contact, both on- and off-road' and will extend Road Accidents Great Britain (RAGB) definitions to include minor damage.**

3. Many third party claims are made for accidents that have not been reported by drivers. **Damage found, under-reporting/unreported damage (particularly minor damage hidden in the maintenance budget), incomplete forms, drivers not telling the truth and low quality data are particular problems.** Many participants suggested that penalties, incentives, competitions, driver excess schemes, points-based disciplinary schemes and bonus schemes, such as the Royal Society for the Prevention of Accidents (RoSPA) scheme, lead to under-reporting. Documented pre- and post-drive vehicle circle checks and driver debriefs can help to avoid this. A simple in-company/site based accident database may be the best way to monitor minor, low speed, low impact accidents below the excess or that head office-based risk managers and insurers are not interested in. Under-reporting, and ways to reduce it, are discussed in Chapter 2.

4. **There is a problem getting drivers to complete report forms fully and accurately.** This, and drivers understating the level of the accident, leads to inconsistent data. Moving to a simpler, shorter, tick-box form can ease this problem and produce better completed forms that come through more quickly. Such forms are not always so good for serious accidents, however, as they may not describe enough detail. An ideal report form should, therefore, include an appropriate mix of quantitative (tick box, coded) and qualitative (open ended, descriptive) questions. Quantitative questions allow easier analysis, but qualitative questions allow more detail and explanation. Drivers should be trained in what is expected of them, particularly in relation to the accident sketch and description. These are very important parts of the driver report form because they provide detail and context. Photographs have proved useful for confirming driver and third party evidence and can help to reduce the cost of third party claims.

5. For many drivers of vehicles, such as company cars, vans and fire appliances, who are not 'professional' drivers, accident reporting is not a priority. **Company cars are often managed separately from commercial vehicles, typically by an accident management company (AMC) (see also Chapter 2).** Car drivers are treated differently from commercial vehicle drivers, because they are senior managers. Typically, car drivers have more control over their own accident reporting and are investigated/disciplined less. There are fewer controls in place, less statistical analysis is undertaken, fewer licence checks are made, and they receive less assessment and training. Agency drivers are important. The system must ensure that their accidents are effectively reported, recorded, coded and analysed by the agency as well as the client. Managing drivers on varying and often 'unseen' shift patterns and providing driver support at-scene are also important elements of the reporting and recording process.

6. **Inadequate damage tracking/monitoring procedures mean repair costs/estimates are often not linked to the relevant accident.** This is important because allocating accident costs to the relevant cost centre (depot involved in the accident) helps focus management attention. The use of systematic unique reference codes to track individual accidents is required. New systems should recommend only undertaking damage repairs when an accident number has been supplied. Vehicle replacement policy and outsourcing maintenance can also affect accident reporting.

7. **Management commitment is necessary for improved accident reporting and recording.** In many cases existing databases may not be easy to change to a new system, so a bolt-on risk management element may be required. The operating environment and culture, getting managers and drivers to accept best practice CoVIR and managing the change process of implementing new systems will all be necessary. Change management and gaining the involvement, acceptance and support of top-level senior managers, local management, the workforce and trade unions will all be vital in any attempts to improve accident reporting and recording practices. Senior managers are often unaware of the problem or not committed to improvement and make safety a low priority behind 'getting the deliveries made'. Raising awareness of the problem is important. Accidents cut across functional and budgetary boundaries in organisations, which masks the problem, and makes decision-making difficult. This highlights the need for continual training and reaffirming safety messages. A best practice accident reporting and recording system should constantly sell the importance of the process. Drivers should be involved through consultation and feedback of regular accident information. A management champion within a business or site is often the difference between the success and failure of accident reporting, recording and reduction schemes.

8. **A standard accident type coding system will be necessary,** as many different coding systems currently exist. For example, TNT has 28 separate accident categories, TDG nine. To develop a standard coding system for *'type of accident'* the project should be led by Stats19. It should also include 'underlying causes' of accidents (for example nature of operation, speed, young inexperienced drivers, management culture, poor management and driving skills, shift patterns, effects of round-the-clock operations, driver stress, drug and alcohol use, and fatigue) as well as immediate accident type. Managers, or sometimes claims handlers, normally allocate these as part of the accident review process, which could be at a monthly/quarterly meeting or as part of the investigation process for each accident. Accident codes are discussed further in Chapter 4.

9. **An investigative interview is important after all accidents.** This should verify everything, including tachographs (even though tachograph analysis may not always be totally accurate for detailed accident analysis), training records, witnesses, the accident scene, unreported damage, reporting policy, vehicle circle checks and debriefs. The focus of the investigation should be on underlying, as well as immediate, causes and types of accidents (underlying cause = eyesight, immediate type = reversed into gatepost!). Accident investigation should be included in the reporting system and is discussed further throughout this report.

10. **Standard key performance indicators (KPIs) are important for relating accidents to workload.** Comparable standards should be identified, evaluated and agreed on, which cater for all operation types (for example cars, home delivery, parcels, contract, trunking and multi-drop) and issues such as seasonality. Participants used the KPIs shown in Table 3.6. KPIs are also discussed in Chapters 2 and 5.

Table 3.6

KPIs identified by the meetings
Counts of accident types, repeat drivers, vehicle types, level of damage, unrecorded damage going through the maintenance budget, fault/non-fault, costs and time to report
Accidents per 100,000 miles/kms
Accidents per million miles/kms
Kilometres/miles per accident
Avoidable accidents per mile driven
Total accidents per mile driven (by vehicle type e.g. artic, rigid, car)
Shifts/months per accident (important for managing driver agencies)
Accidents per vehicle
Accidents per driver
Average accident cost
Accidents per £100,000 of turnover

11. **The market is constantly evolving and changing and accident reporting and recording cannot be separated from the overall running of the business.** Current issues include the implications of the Woolf Reforms, dealing with fraudulent claims, health and safety regulations moving into transport and increased personal injury claims, hospital fees and insurance costs. These issues should force accident recording to be improved. Companies merging (including several participants during this project) can also lead to more standardisation in the long term, but confusion and reliability problems in the short term. Job and finish payment contracts for drivers encourage speed. This is clearly a sensitive management issue because companies, drivers and their unions often like such schemes. All this means that wider information than just the accident details, such as business changes, seasonality, payment terms, shift patterns, times/distances worked and fleet/driver information, is important for accident analysis.

12. Accident reporting and recording appears to be fragmented between transport and health and safety. Personal injuries on-site have tended to be stressed by companies because of RIDDOR requirements. Many organisations manage road accidents very closely with theft, personal injuries, goods in transit, property damage and insurance. In addition, some major participant organisations, including the armed forces and fire services, are outside many traffic regulations.

13. Most companies advise their drivers **'in the event of an accident, do not admit liability'**. Whatever the merits of this, a common argument is that companies do not want drivers to be involved in the process of deciding who is responsible for the accident. This should be left to people who are more qualified to make such a judgement, particularly from a legal perspective. The downsides to this are that it can draw out the claims process, add costs and encourage drivers not to report the accident fully/truthfully to their employer. Particularly for companies who are self-insured, if the driver is clearly at fault, there is an argument for admitting liability and settling quickly.

14. **Current report forms and systems tend to be insurance and claims-led, for liability, cost and claims management rather than risk management analysis of accident causes and types.** As a result, participants could be better at coding the data and using it for meaningful analysis. Current forms often try to establish who was to blame rather than what happened and why. A great deal of claims information is available. It can, however, be difficult to get accident/risk management data out of the system. The accident database is often a low priority element of a wider fleet management or claims system, which cannot be changed without costly programming. A user-friendly flexible software package, to allow the coding and extraction of meaningful causation and risk management information and its use for needs-based accident prevention, is important. Any new report forms/system must consider the analysis and outputs required.

15. **Accident costs are rising, due to increased repair costs and 'ambulance chasing'.** For example, a £300 damage accident could also involve a £2,000 whiplash claim, plus £3,000 of solicitor's fees. As discussed in Chapter 2, the insurance industry lost £1.6 billion in 1998. This, and the more recent impact of 11 September 2001, means that it will be harder and more expensive to get insurance. Insurers are starting to do more accident analysis and will only take on fleets committed to risk management. They should support an alternative report form as long as it contains the basic claims information. Currently insurers, brokers and AMCs treat each client individually and there is no clear common standard in terms of the services provided.

16. **AMCs (see Chapter 2) could play a large role in the standardisation process and in speeding up the claims**. Many participants did not see call centres and telephone based reporting as a good idea because they add another layer into the system and they can lessen the impact of accident investigations. Currently, AMCs are mainly used for company cars, where service to the driver is important. They are not used so much for commercial vehicles, where depots want to be involved in completing the form and undertaking a debrief/investigation. They are often used because it is seen as cheaper than traditional methods. There appear to be several important issues when using AMCs and call centres. These are shown in Table 3.7.

Table 3.7

Issues in the use of accident management companies and call centres
They do not always allocate the accidents to the correct depots/cost centres, particularly on hire vehicles.
They sometimes have to be pushed/led to provide any risk management information.
Telephone call centres have many problems. For example, differences between the interpretations of telephone operators can lead to low levels of standardisation, particularly if there is a high staff turnover or a lack of staff expertise. Another problem can be that accident causes are not always probed for in enough detail. 'Damaged while parked' is a very common accident type through telephone call centres!
They are generally claims and repair management orientated rather than risk management led.
For company car fleets they often manage claims and repairs, for large goods vehicle (LGV) fleets they manage the claims but generally not the repairs.
For company cars the driver tends to call in the accident from the scene, for commercial vehicles the depot manager calls in or sends in a form from the depot, so that an investigation can be undertaken.
Clients normally work to the AMC coding systems although they can be tailored if required. The reporting system is essentially the same for all clients.
There are often teething problems with new clients.

17. **There is currently a generic core of information in all organisations, typically in their claims system. There are also differences between companies.** For example, small companies often have no systems in place and rely solely on their insurer/broker. The project must consider them and their capacity to implement change. The CGU guide *Motor fleet risk management* (1999) is a very good starting point template for this. Bus company report forms are often similar because many of the existing companies were part of the former National Bus Company. Their systems are very good due to the seriousness of the PI and ambulance chasing issues and their coding should be used in the development of the new system. Many of the larger commercial fleet operators, who tend to be self-insured, also have good practice in place.

18. **Any new system should not overlook commercial considerations and should be as simple, practical, realistic and easy to implement as possible!** Many drivers have modest writing skills and drivers must be encouraged to tell the truth/full story. Developing the shortest and most simple driver report form that is practical (ideally two sides) is a consensus that emerged from the meetings. A coded recording form should be used for the investigation/debrief.

19. The case studies produced a comprehensive review of company vehicle accident reporting and recording and helped to identify a great deal of best practice information for reporting, recording and analysis of company vehicle accident data. Many of the case study participants have very thorough claims management systems in place, but could make more of the data for risk management. The recommended approach should offer best practice guidelines on managing process and getting more from the existing data that companies already have. The project should develop a manual/best practice guidelines to 'pick and mix' from rather than a set of prescriptive rules. It should be kept simple and apply to all driver and vehicle types (including cars, vans, rigids, artics and buses, courier bikes, and local authority vehicles), and company sizes, including smaller companies who currently 'do nothing'.

20. Taking elements from each of the systems reviewed would suggest that accident reporting and recording has four key stages similar to those identified in the injury prevention matrix developed by Haddon (1980):

- pre-accident;

- at-scene;
- post-accident; and
- accident analysis.

Summary of current practice (Tables 3.8 to 3.11) were developed for each of these four areas. They have the potential to be converted into a best practice accident reporting and recording self-audit at a later date.

Table 3.8

Pre-accident summary of current practice	
Pre-accident	Managers/depots have a depot procedures manual which includes vehicle accident management
	Policy in place to investigate all accidents, with trained managers operating to company guidelines based on the severity and level of the accident
	Assess all new and agency drivers using a written, IT-based or in-vehicle assessment
	New driver induction programme and driver handbook including: what to do in the event of an accident, accident reporting procedures for fatalities, injuries, damage only and near hits, contact numbers and insurance details
	New drivers trained on accident costs, completing an accident report form and the importance of getting third party details
	New drivers operate for a few days with a more experienced driver
	All drivers receive a handbook that includes detailed written procedures for what to do at-scene, including not admitting liability, accident reporting and bump/prompt cards to manage the scene, record the accident and exchange details with witnesses and third parties
	All drivers/vehicles have an 'accident pack' (including a standard insurance accident report form, a depot level minor damage report form, bumpcard and disposable camera)
	Existing drivers assessed and trained (for example in defensive driving) on a rolling programme
	All own and delivery sites risk assessed/rated by drivers and managers
	Briefing packs/delivery guidelines including photographs available for each delivery point
	All drivers complete a vehicle circle check form at start of drive and report any defects or damage, which must be signed off by a supervisor
	Regular poster campaigns, notices and newsletters cover accident reporting

Table 3.9

At-scene summary of current practice	
At-scene	Minor accidents are dealt with by the driver who manages the scene using guidance notes/procedures booklet/bumpcard and will continue the trip if possible Driver reports in to line manager using in-cab telephone/radio ASAP and completes a short accident report form at-scene In call centre-based operations, driver phones 24/7 helpline, operator checks driver/vehicle details against fleet database, takes accident details and report form completed automatically Major accidents (injury/fatality) attended by depot staff ASAP to manage the scene, support the driver, gather evidence and implement damage limitation/investigative escalation process Driver should not admit liability. Alternatively, if it is your fault - admit quickly to minimise costs Driver exchanges details (name, address, phone number, insurance) with third parties and collects as much information as possible using bumpcards Driver gets witness statements and details Driver records name and number of any Police officers involved Driver takes photographs of vehicles and scene All injuries are reported to the Police by the driver

Table 3.10

Post-accident summary of current practice	
Post-accident	Major accidents, for example fatality or RIDDOR level injury, are investigated and photographed immediately, with the vehicle being impounded and inspected by the Freight Transport Association (FTA), a detailed report produced and a public relations damage limitation exercise implemented. Injuries are reported to the Police and/or HSE For minor accidents, if vehicle is still roadworthy, driver continues job All drivers debriefed and vehicles inspected for damage at the end of each shift Accident report form and/or claims form completed by driver (and supervisor) at depot or unreported damage found or third party claim/complaint arrives All accidents are allocated a unique reference/claim number so that costs can be linked to the relevant accident and charged to the appropriate site budget. Report forms must be completed before another vehicle is provided All drivers completing a form are interviewed/debriefed immediately or ASAP within 24 hours, by a site manager using an investigation checklist to discuss accident with driver, check the report/claim form, review speed and breaks on the tachograph chart, and inspect vehicle damage. Typically the manager completes an investigation form, signs driver's form, establishes liability, reviews previous accidents, sometimes allocates blame and type codes, and decides on remedial action/ countermeasures

	Accidents discussed at monthly/quarterly safety, driver committee, depot meetings or accident review panels to categorise them to determine liability and countermeasures All accidents where a payout to a third party is made are deemed as blameworthy In call centre-based operations, the report form is posted to the driver's home to complete accident details and a sketch. The driver completes and signs the form and posts it back to the insurance department or AMC Copies of the report and investigation forms are filed on-site and data is entered into the site database or 'accident book'. Other copies of the form go in the driver's file as well as being sent to relevant managers and the insurance department/claims handlers Insurance/risk/claims department/broker/insurer capture the data, manage the claims process and deal with brokers, third parties and insurers. Sometimes they also manage accidents where no claims are involved, to ensure complete data capture Form entered onto claims/insurance/risk management database system, which may automatically allocate the accident to the correct vehicle, shift and run, as well as driver details

Table 3.11

Accident analysis summary of current practice	
Accident analysis	Weekly/monthly/quarterly/six-monthly trend analysis by insurance/claims system produced to give: league tables and KPI reports for site-by-site comparison of general trends, accident rates (for example accidents per 1,000 kms), types, locations, costs, dates, times, repeat drivers, agency performance, time to report, unreported damage and any specific issues, trends or problem areas Report circulated to board members, individual site managers and divisional health and safety managers, and reviewed at monthly/quarterly management meetings Risk assessments undertaken at sites with high accident frequency and of specific issues, including eyesight, blackspots, hours off duty and health checks. Information fed back to drivers and remedial action undertaken at non-compliant sites, including charging depots directly for accident damage and penalty charging for late or non-reporting Quarterly/six-monthly meeting between brokers, insurers, claims handlers and depot managers Annual performance review/report produced by insurers/claims department Key statistics published in company newsletters/business development information

3.4 Project questionnaire

A questionnaire was developed to supplement the accident report forms that organisations supplied and to support and help structure the meetings. This was pre-tested on managers from three

organisations. All the 55 managers who signed up to attend a meeting were asked to complete a questionnaire. The data shown in this section is taken from the 38 completed responses and is generally felt to be representative of all those who attended the meetings.

3.4.1 Summary of key statistics

Table 3.12 shows some of the key statistics from the analysis. The 38 questionnaire participants operate nearly 225,000 vehicles, with over 110,000 accidents per year in the 33 companies who answered that question. The average accident rate per vehicle and per driver is 1.1 accidents per annum and the average accident costs just over £900 for repairs. These findings are very similar to those of Murray, Durkin and Williams (1996) and Murray (1997).

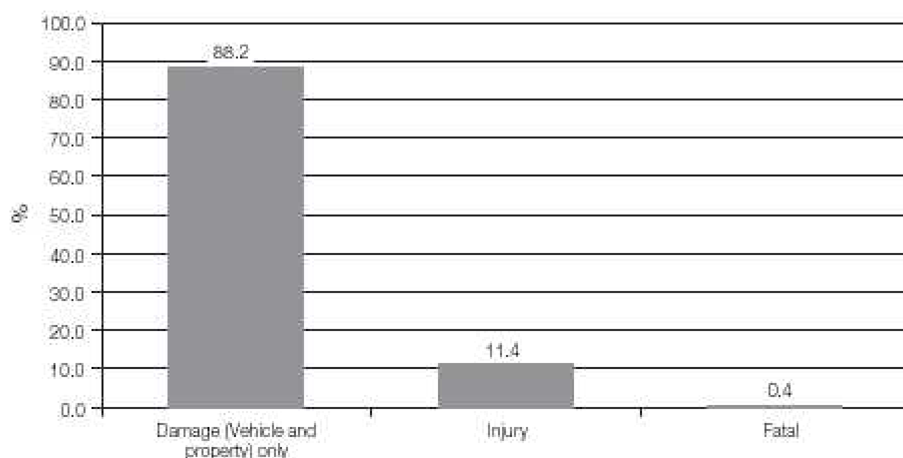
Table 3.12

Summary statistics

Questions	**Key statistics**	**Number of participants**
Total vehicles	224,924	38
Total drivers	39683	14
Total accidents	112,556	33
Accidents per vehicle	1.1	33
Accidents per driver	1.1	12
Accidents analysed using tachograph/blackbox (%)	18.5	25
Accidents reported to Police (%)	14.4	31
Average cost per accident (£)	932	31
Total cost of all accidents in the survey (£)	**107,935,329**	**28**

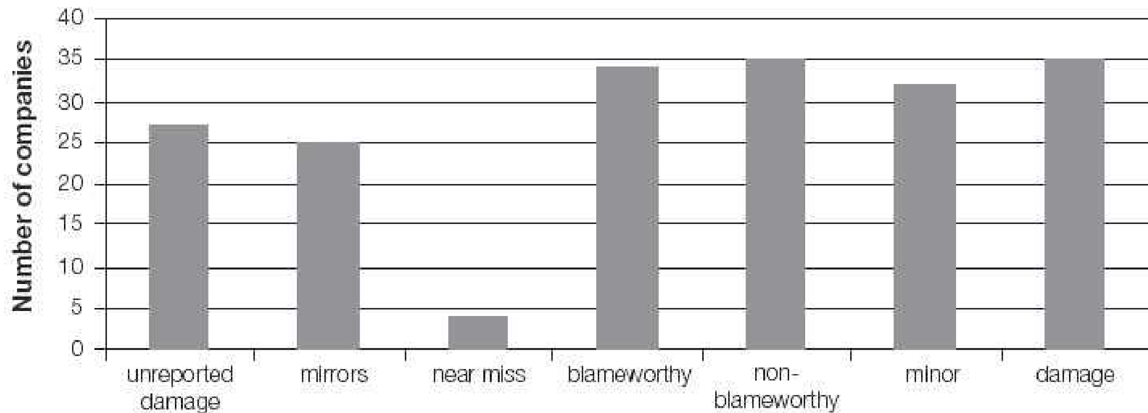
Graph 3.3 confirms that the level of accidents involving participant organisations tends to be relatively minor. Most of the accidents are 'vehicle and property damage only' and thus fall outside nationally produced accident statistics. This, and the data in Table 3.12, supports the conclusions of Adamson (1997) that only a minority of company vehicle accidents are ever reported to the Police.

Graph 3.3 - Accident severity



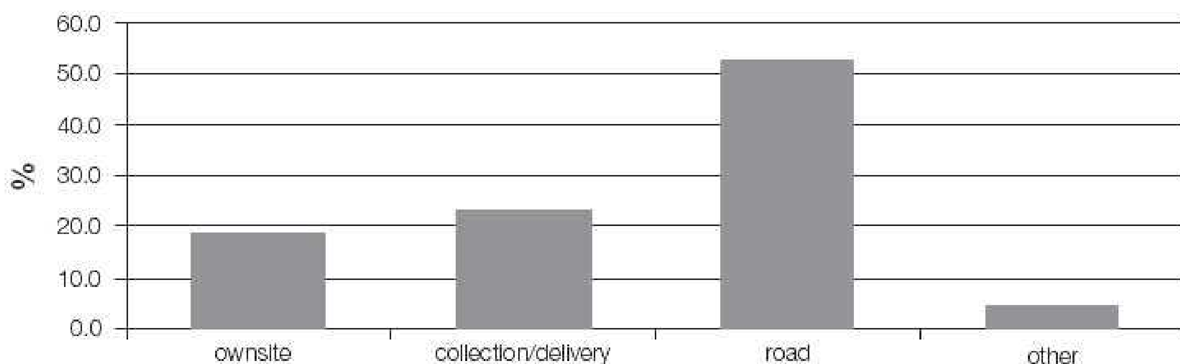
Graph 3.4 summarises the level of accident reporting by participants. It shows that very few of the participants claim to record near hits and some do not record unreported damage or broken mirrors. As a starting point, best practice should be to include all accidents involving any damage to vehicles (including wing mirrors), property or people. Once this is in place, it will allow companies to compare their performance more accurately. Near miss reporting could then be the next step. This supports the conclusions of Murray, Durkin and Williams (1996).

Graph 3.4 - Level of accidents reported



Graph 3.5 shows accident locations with just over 50 per cent occurring on-road and most of the rest occurring 'off-road' at depots, collection and delivery points. Many of the accidents involved slow speed manoeuvring and reversing. This has several implications. Many of the accidents fall outside current vehicle accident (Road Traffic Act 1988) regulations and will never be recorded by the Police. Unfortunately, few of these off-road accidents will be reported or recorded under RIDDOR workplace safety regulations as no, or little, time is lost (workplace accidents are only RIDDOR-reportable if more than three days of time are lost). Graph 3.5 also suggests the need for risk assessments at frequently visited sites and the provision of detailed delivery guidelines for drivers.

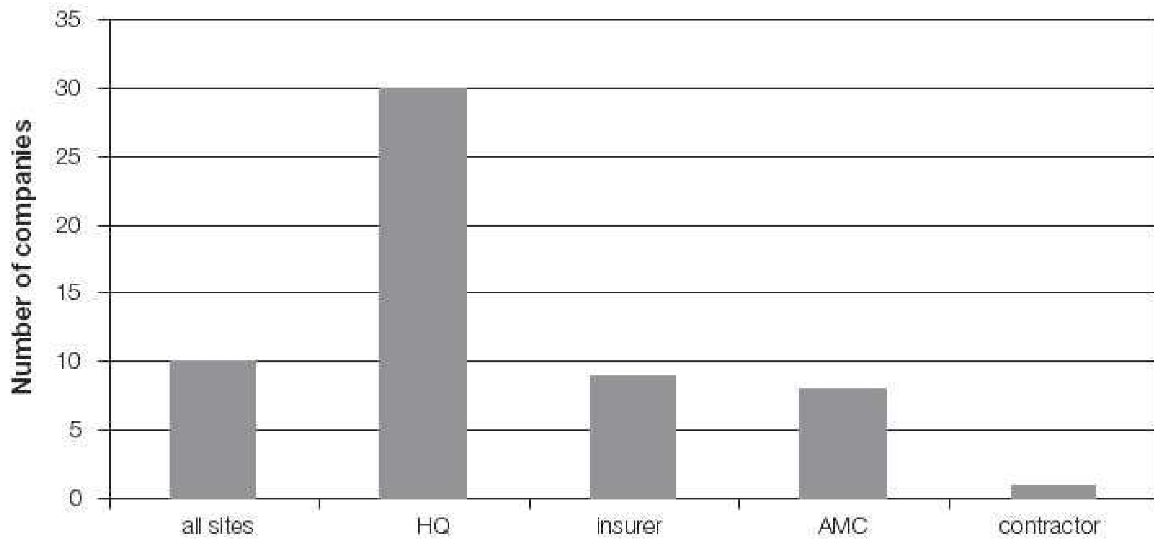
Graph 3.5 - Accident locations



3.4.2 Accident management, insurance and best practice

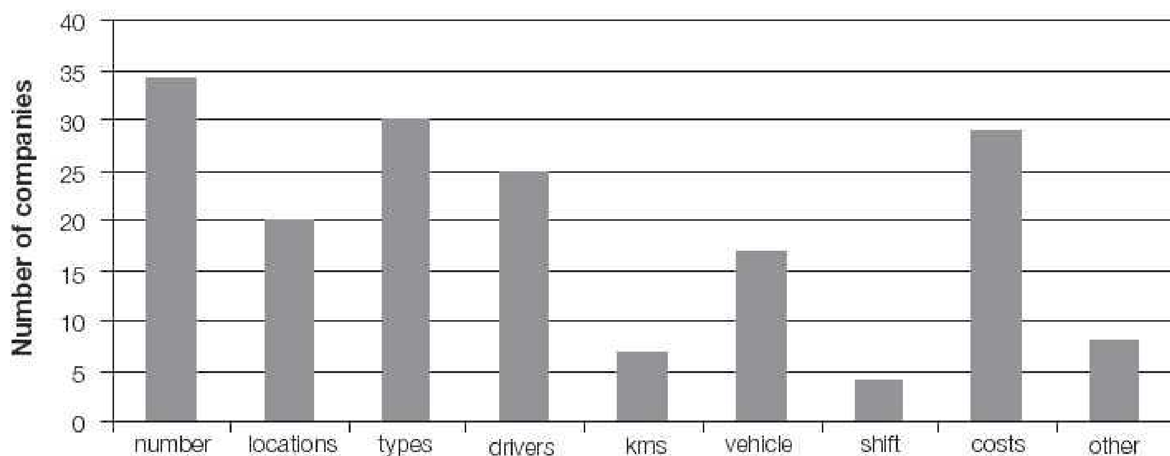
Graph 3.6 shows where the participants' accident recording systems are held, most being operated at head office level. Only ten participants have site-based recording systems which have been found to be beneficial for local depot level analysis by Murray and Dubens (2000).

Graph 3.6 - Location of accident recording systems



Graph 3.7 shows the KPIs used by participants. Most monitored their number, types and costs of accidents. Fewer monitor their accidents by location, by driver, distance travelled, vehicle or shift. Other key performance indicators mentioned were time of day, day of week, accidents per customer, agency/own, vehicle usage, repeat offenders (same as drivers), vehicle types and costs. This confirms the findings of Murray and Dubens (2000) that some simple standards need to be agreed to allow comparisons.

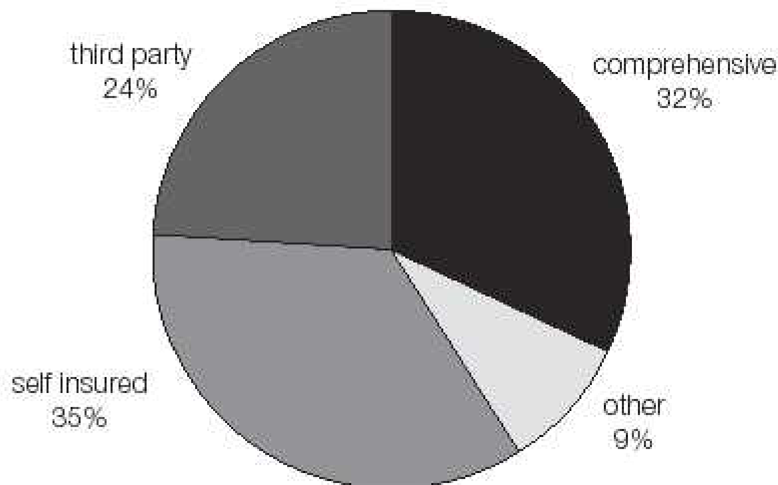
Graph 3.7 - KPIs



Insurance arrangements are important because, in most companies accident reporting and recording process was claims/liability/insurance driven. As can be seen from Graph 3.8, however, many of the participants' accidents will not actually be covered by insurance!

Graph 3.8 summarises the vehicle insurance arrangements of participants. This is important because, currently, most accident reporting and recording is driven by the need to minimise the cost of insurance, liability and claims. The largest proportion (35 per cent) of participants are self-insured. Many of the insured participants also reported very high insurance excesses (whereby the insured pays anything in the claim up to that amount), essentially making them self-insured as well.

Graph 3.8 - Summary of insurance arrangements



Most participants saw themselves as 'moving to best practice' in the following four areas, although a significant number admitted that they were not best practice, suggesting that many UK companies may have an opportunity to improve their systems for accident reporting and recording:

1. Reporting, recording and monitoring fleet, individual driver and individual vehicle accidents.
2. The coding in their accident reporting/recording system.
3. Capacity to obtain meaningful performance statistics, analyse trends and identify problems.
4. Controlling insurance, administrative and cost factors in relation to each accident.

3.4.3 Key findings from the questionnaire

Overall, the questionnaire results have helped to confirm the findings of previous research, including Adamson (1997), Yates (1997), Murray, Durkin and Williams (1996), Murray (1997), RoSPA (1998 and 1999) and Murray and Dubens (2000). The key findings to be drawn from the questionnaire analysis are as follows.

1. **Each participant vehicle averages just over one accident per year, most of which are relatively minor, reversing and manoeuvring, costing on average less than £1,000.**

2. There are **large variances in what participants actually report and record and the coding systems/standards** they use for doing so.

3. An equal number of **the participants' vehicle accidents occur off-road as on-road.**

4. Currently much **accident reporting and recording is driven by insurance and claims,** even though most of the accidents are often not actually covered by insurance due to high excesses and self-insurance.

5. A large proportion of participants admitted that **there is a scope for them to improve their accident reporting and recording.**

Chapter 4 - Developing and pilot testing the CoVIR system

4.1 Introduction

Chapters 2 and 3 identified **what to report, record and investigate** and **how to structure it.** From this early project research, several conclusions can be made concerning the CoVIR system to be developed and pilot tested:

- most existing forms were claims-based and did not focus enough attention on investigation and recording the data for ease of risk management;
- forms were required for accidents to be reported and investigated. Some participants had joint forms but most had a report form only or separate reporting and investigation forms. An at-scene bumpcard would also help participants;
- many drivers, and some managers, have modest writing skills. This implies that the forms should be kept as simple and short as possible;
- the process is important, as well as the report form, so a guidance manual will be required;
- report form structure varied from company to company. It should include sections on: management, driver, company vehicle and property, damage to other vehicle and property, details of accident, driver's description of accident, sketch plan, Police, persons injured, witnesses and a declaration; and
- post-accident investigation is important but often overlooked. Investigation forms varied but, typically, included accident information, driver information, manager/supervisor information, accident causation and type codes, actions to be taken and a declaration.

Based on these findings the first draft of the new system was written and presented to more than 20 managers for comments and revisions at two pre-pilot study meetings and visits to three project participants.

The new system included four main elements:

1. At-scene bumpcard to be *completed by the driver at-scene.*
2. Vehicle accident report and investigation form to be *completed on return to site by driver, supervisor or investigator.*
3. Manual and flowchart for the accident report and investigation form to *provide process and usage instructions.*
4. Summary coding card for completing the accident reporting and investigation form.

The bumpcard, accident report and investigation form were initially based on TNT documents as a template. Best practice elements were added, and refined, from the analysis described in Chapter 3.

Data coding systems were extracted from all the literature-based and participant systems described in Chapters 2 and 3. They were then sorted by type to allow comparison and rationalisation into a new standardised set of codes for the following areas:

Accident location	Injuries	Status of witness
Accident type	Light Conditions	Traffic conditions
Bus passenger injuries	Management factors	Treatment
Bus specific	Manoeuvre of vehicle - own/third party	Underlying causes

Collision with	Purpose of vehicle use	Vehicle damage - own/third party
Commercial specific	Road conditions	
Direction - own/third party	Road configuration/ junction	Vehicle defects
Driver status	Road surface	Vehicle signals - own/third party
Driving licence type	Road type	Vehicle type - own/third party
Extent of damage	Speed - own/third party	Visibility
Gradient	Status of injured	Weather conditions
Hit fixed objects - objects		
Immediate cause of accident		

Overall, participants at the pre-pilot study meetings felt that the system was good and thorough, particularly focusing on the accident investigation. It was criticised for appearing long-winded and heavy going. It was felt that clear instructions for users to follow would be required, particularly on what order the forms should be used in and who should complete them.

Based on this feedback the system to be pilot tested was revised.

1. The first draft of the four-sided A5 bumpcard was rationalised and improved, although it proved impossible to devise one standard bumpcard to cater for all participants. Their requirements differed greatly and they often had company specific details included. The new bumpcard would be most useful for those participants who did not already have such a system in place. Appendix 4.1 shows the bumpcard.
2. The first drafts of the report and investigation forms were cut down from six to four sides and merged into one new combined form, with the investigation on the final page. Based on the feedback from the pre-pilot study meetings, almost all the verification in the investigation part of the form, as well as *'management factors', 'postcode', 'costs', 'road surface type', 'road gradient' and 'treatment/hospitalised'* were removed completely from the new combined form. *'Type of fixed object'* was not used from the original codes list. Appendix 4.2 shows the form, which has been further revised after the pilot studies. *'Cost'* is a very important issue but it was felt better to include it as part of the accident database rather on the report form itself.
3. The first draft driver, manager and investigation manuals were rationalised and combined into one new reporting, recording and investigation manual into which the recommended process flow chart was later added. Appendix 4.3 shows the revised manual, including the TNT-based *'accident type'* codes, and the Transport Research Laboratory (TRL)-based *'precipitating and contributory factors'* codes.
4. The first draft report and investigation coding cards were rationalised and combined into a four-sided A4 card. The codes for *'actions to be taken'* were removed because the meeting participants felt that developing their own ideas to solve problems, rather than trying to work to a prescribed list, would better serve users. The list was left in the new combined guidance manual, however, because it was seen as a set of best practice ideas that could help users wishing to go into greater depth. Appendix 4.4 shows the coding card, which has been further revised after the pilot studies.

At the end of this process, the system was considered ready to be pilot tested.

4.2 Pilot studies

An initial pilot study of 3 months was undertaken followed up by a second 15-month study. They had three main objectives:

1. To review the operation of the proposed vehicle accident reporting system.
2. To analyse data generated from the pilot study of operators.
3. To use this experience to evaluate and improve the effectiveness of the system and process.

Participants were requested to provide as much honest feedback, positive and negative, as possible and provide copies of their completed report forms. In total, 49 useable reports were received from the initial pilot study and 216 from the second.

4.3 Pilot participants

Of the 20 or so managers who attended the pre-pilot meetings, the 13 in Table 4.1 (see page 71) became active participants in the initial three-month pilot study. The following reasons were given for either not submitting any report forms or not participating:

1. Five organisations reported that they had no accidents during the pilot study period.
2. The pilot study timescale was too short for three organisations, some of whom are integrating features from the project into their systems in the longer term.
3. Four other organisations could not take part due to internal restructuring.
4. Two organisations could not participate due to the strict health and safety guidelines to which they currently adhere. Both are integrating features from the project into their systems in the longer term.
5. An insurance broker felt the system was too large and too generic. It should be tailored to individual sectors, particularly claims, risk management and society data.
6. One risk manager wanted to take part, but the company's transport managers were unwilling to take on the extra work required to be part of the pilot study.
7. Two service companies (an insurer and driver trainer) aimed for one of their clients to participate but no forms were received.
8. Two small hauliers were keen on the principles but were too busy 'surviving' at a time of business and staff changes to concentrate fully on the project material or commit resources to it.
9. One large company could not provide the commitment required by the project.
10. One medium-sized transport company struggled to take part due to opening a new depot, a pay dispute and IT problems in installing accident data analysis software.
11. A manufacturer felt that, apart from a fatal accident that occurred during the pilot study period, its vehicles were not involved in accidents so did not need to take part.
12. A large parcels company felt that the system was too long and complicated for its managers and drivers to complete. During the period of the initial pilot study the company was involved in at least one fatal accident, which was reported in the *'Huddersfield Daily Examiner'*.
13. A manufacturer implemented the system at one site but not another because the paperwork for drivers and managers was seen to be 'too involved'. It had at least three accidents at the involved site during the pilot study period but no report forms were forwarded to the University.

All of these reasons for not participating suggest that **change management and implementation** issues are very important barriers to overcome.

Table 4.1 shows the 13 participants in the initial pilot study along with approximately how many of their sites, drivers and vehicles were involved, and whether they were running the pilot in parallel with their existing system.

Table 4.1

Table 4.1

Initial pilot study participants

Title	Company type	Sites	Vehicles	Drivers	Forms	Parallel
Fleet services manager	Retailer 1	4	200	200-300	2	Y
Managing director	Transport company 1	1	15	13	4	Y
Production services manager	Manufacturer	1	10	6	1	Y
Managing director	Transport company 2	1	23	20	2	Y
Risk control manager	Transport company 3	20	350	500	8	
Group risk manager	Transport company 4	1	75	75	3	Y
Plant and transport manager	Local council	2	700	350	6	Y
Transport manager	Retailer 2	1	100	120	12	
Site manager	Recycler	1	7	6	2	Y
Quality training manager	Driver agency	4	–	–	1	Y
Insurance and administration manager	Home delivery retailer	1	60	50	2	
Group risk manager	Transport company 5	1	26	23	3	Y
Driver trainer	Transport company 6	1	86	56	3	
Total		13	860+	700+	49	9

The organisations that took part in the initial, but not the second, pilot study gave a range of reasons for not continuing. Mostly they had incorporated parts but not all of the new system into their operations.

1. Retailer 1 was taken over by another participant and transport company 4 went out of business.
2. The manufacturer found the bumpcard, formal manual and report form good to allow more detailed information to be captured about accidents. The project helped to identify the extent and costs of the problem, which is normally managed by its broker. The main problem was the difficulty in making drivers understand that extra information was good for helping defend their case. The company did not adopt the system because it is driven by its broker.
3. Transport company 2 has adopted parts of the system, including bumpcards and cameras in each vehicle, but not the forms. It has been taken over since the project and now uses a form provided by its insurers. It recently won a road safety award based on its participation in the project.

4. The local council used the project to improve its existing bumpcard, which is used for 98 per cent of its accidents. It liked the accident report form, but found it long and time consuming. Management politics was the biggest problem because CoVIR cut across several functional boundaries. Local authority protocol made it very difficult to implement the form without 'walking on people's territory'. It was also felt that involvement in the project led to a level of under-reporting, with accidents being 'swept under the carpet' during the period of the pilot. It did not adopt the system due to these management change issues.

5. Retailer 2 adopted the bumpcard and implemented the IDS 'It all adds up' crash counting system to analyse its accident data at three of its depots. One of its transport contractors installed the IDS system at two further depots. It used the project and system to go from having little data of its own to being able to identify problem areas and training needs and to link driver's safety performance to its training records. It is seen as important for showing 'due diligence' and providing an audit trail of risk management activities.

6. The recycler has adopted a great deal of the system including cameras, the bumpcard (with its own company details added to it) and a redesigned version of the report form. The bumpcard, which it did not have before, was particularly useful to monitor minor damage, and to link into driver de-briefs and end of shift circle checks. Previously it had a minor damage form (less than the £1,000 excess) and an insurance form. Now it has one combined form, but only accidents costing over £1,000 are forwarded to the insurer. Different levels of investigation take place depending on accident severity. It uses its insurer's coding because it found the CoVIR codes and process quite time consuming.

It has used the improved data analysis to start to change its culture. To move from using agency drivers, who are difficult to train and keep, it employs more stand-by staff for busy and holiday periods. Its driver assessment and training has become more tailored based on the accident statistics. It is currently working to investigate and explore root causes of accidents in more detail, but is mindful of the trade-off with the operational issues of getting the job done. It also used the project to negotiate insurance premiums.

7. The driver agency has taken elements from the system, but is not using it in total as it is too 'big'. It tried, unsuccessfully, to get several of its clients to use the full system.

8. A large utility company that was not involved in the original 3-month pilot because of the timescale required to implement projects in the organisation has now adopted much of the system and finds the bumpcard a useful addition to its procedures. The main problem was objections to the amount of information that the drivers had to complete. This was resolved by publicising the new bumpcard, forms and procedures on its intranet for drivers to print off. Health and Safety representatives also briefed staff on the new procedures. The biggest problem now is managers not countersigning the report forms.

This left the five participants in Table 4.2 in the second, longer term, pilot study.

Table 4.2

Table 4.2

Second pilot study participants

Company	Title	Accident database	Report forms	Investigation forms	Vehicles/ trailers	Drivers	Trial scope	Timescale
Transport company 1	Managing director		29	29	19/5	20	Adopted in full	5/2000–12/2001
Transport company 3	Risk manager	596	0	0	360/130	500+ agency	Adopted in full	7/2000–1/2002
Home delivery	Insurance manager		33	33	60	70	1 depot	11/2000–7/2001
Transport company 5	Risk manager		35	35	40/50	30+ agency	1 depot	9/2000–1/2002
Transport company 6	Transport manager		119	26	80/120	140	Adopted in full	6/2000–1/2002
Total		596	216	123	560/305	760		

(Note: Transport company 3 provided its accident database rather than the paper-based report forms provided by all the other participants.)

The figures for vehicles and drivers in Table 4.2 are only indicative to allow a feel for the level of exposure. Several of the participant fleets changed during the 18 months of the project. For example, transport company 6 grew by 50 per cent. At peaks the fleets will increase through rental vehicles and drivers may increase with the use of agency staff. Data on the number of kilometres travelled or shifts worked would also be interesting exposure measures, but is more difficult for participants to provide accurately. Transport company 3 and transport company 6 did not provide data from the investigation element of the process, for the reasons described below:

1. Transport company 1 adopted the system in full. It has had 29 accidents since it started. Implementing the system was a culture shock for the organisation. Previously if an accident involved a company vehicle but no third party it would not be reported at all. If a driver reported an accident the company would wait to see if a third party made a claim before acting. The positive side of the new system is that all accidents are treated as important. Managers now sit down with the driver and spend about an hour writing a report and asking questions. Nobody asked the questions before, and if the company did not put any importance on it - why should the driver?

   Previously, knocking a mirror off was treated the same as putting a defect report in about the clutch slipping - and went through as maintenance. CoVIR has changed this and made lost wing mirrors and torn curtains more important. This led to a doubling in the number of accidents - due to the extra reporting! 40 per cent of these accidents were 'reversing'. This has now stabilised and the numbers have returned to the pre-CoVIR level because all the drivers are taking things more seriously. There is still some under-reporting, but failure to report an accident is classed as 'gross misconduct' and can lead to dismissal. This means that failing to report is much more serious than the actual accident. Linked to this it has implemented a low cost award, where accident free drivers receive a small reward and a certificate presented at a company-wide award ceremony.

   Initially the main problem the company faced was analysing the data after entering it on to a spreadsheet. Managers have since been trained in the use of pivot tables for this purpose. The company is also uncertain about some of the codes. For example on multi-drop deliveries it is sometimes difficult to distinguish between the highway and customer's premises.

The company has produced its own bumpcard based on CoVIR. It now uses this in all cases including minor damage. For bigger accidents it uses the full CoVIR form and then introduces its insurer's form if a third party wants to make a claim that is bigger than it would pay out itself.

It has also put cameras in the vehicles, and is refining the process of using them. Initially it got good photos of its own vehicle damage, but not many of third party damage. This has improved through training. It now has sealed first aid kits in all the vehicles, which include a camera and a bumpcard. If the workshop reports a broken seal when they are servicing the vehicles the driver is disciplined. If the driver reports breaking the seal no action is taken and the kit is updated straight away. This means that theoretically every vehicle has a camera and bumpcard. Initially it tried giving all the drivers cameras, but they forgot to bring them to work or 'lost' them. As the company pays most of its own and third party damage repair costs, photographs of third party vehicles have helped to minimise the cost of third party repairs by reducing arguments about the extent and level of damage.

2. 2. Transport company 3 negotiated with its insurer to adopt the system in full, including the bumpcard. It provided its data on a database, which was structured slightly differently to other participants and is analysed separately below. It operates more than 300 commercial vehicles and 50 company cars, which have been involved in about 700 insurance claims since the start of the initial pilot study. It has many highly seasonal retail customers, which means that the fleet size can increase substantially at certain times of the year.

   Monthly summary statistics are circulated to all contracts to allow countermeasures to be implemented. Number of vehicles and vehicle shifts are used for measuring exposure, to allow a fair comparison for vehicles that are double shifted.

   It is about to revise its report form to include more tick-box coding on the form - based on a benchmarking exercise with fellow project member transport company 5, with whom it has began to share ideas and data. It feels that it is better to have the codes on the form itself because managers often do not have the manual or coding card to hand. The driver completes the bumpcard and the manager and driver complete the report and investigation form together. It uses the investigation form to manage the investigation process but to date has not built the results from the investigation into its claims database. This will be the next stage of its evolution. Its accident rate has fallen from 1.6 per vehicle in 1998 to 0.8 in 2002.

3. The home delivery company undertook the pilot at one small depot for six months from 1 November 2000 to 30 April 2001. The depot has about 60 parcel delivery vans and reported 33 motor accidents on the COVIR form. After six months the pilot study was stopped because the depot saw no accident reduction from the process and so did not see it as worthwhile.

   The company's insurance manager got better statistics from the CoVIR report, particularly the investigation form, which helped to get money back from third parties by having a better investigated accident. The form and manual make operational managers concentrate their thoughts on the issue, but they do not see the benefits of it. Unfortunately reporting comes bottom of the list in any tradeoffs for management time with operational issues like getting the drivers out on the road and the parcels delivered. This means that managing the claims process and getting money back from third parties takes priority over developing risk management countermeasures.

   The company found that drivers, particularly agency drivers, were handing out a bumpcard to third parties, but not completing it themselves and not reporting the accident! This meant that third party claims were coming in that were not being reported internally. It is now moving towards 'numbered bumpcards', so it can monitor which drivers are giving them out. It was also worried that the level of detail on the report form may discourage drivers from reporting their accidents.

4. Transport company 5 continued the pilot study at one Northern depot, where it has a good management team. Half way through the transport manager left, and the replacement was not so enthusiastic but it maintained the full 12-month pilot, which provided more than 30 forms.

   Operational managers and supervisors liked the form because it allowed them to sit down with the drivers, but felt that it was a bit 'long-winded'. Risk managers in the organisation felt this was a 'double standard', because you have to spend time with the driver to undertake the investigation properly and find out what actually happened. Managers did not have to 'dual complete' as its own form was removed from the depot. Risk management staff undertook the coding centrally to make the information compatible with its existing database.

   The more detailed CoVIR form helped the company when dealing with insurers, because it has more information. It is now adopting a tailored, 'slimmer' version of the CoVIR system throughout the whole business to try to develop a 'no-blame' culture with the drivers.

   It is currently focusing on 'wear and tear' and reducing the costs of unreported damage. Its accident rate has reduced from 24 per million miles in 1996 to 17 per million miles in 2002.

5. 5. Transport company 6 adopted the full system on 8 June 2000 to replace its previous forms. The company has gone through a great deal of change and growth since that time, which makes it quite difficult to calculate an exposure measure. The system has noticeably improved the quality (completeness and accuracy) of reporting because the manual helps the driver. A copy of the manual is given to all existing and new drivers - so that they understand what they have to do.

   The main problem with the form is getting busy traffic managers to use the investigation element of the process to complete the loop. It is a trade-off, and running the operation takes priority. This is an internal management issue, and it is planned to nominate one person to co-ordinate the process.

   To date it has not used a database to analyse the data.

   Unreported damage (particularly to trailers used on multiple legs in the same trip and on multi-user vehicles) is also seen as a problem as it is difficult to monitor who is responsible.

   It is concerned about the impact of the working time directive, and is moving towards a weekly salary for drivers - on a job and finish basis. In several of the cases reviewed in Chapter 3, this has been shown to increase an organisation's accident rate.

   Overall, the company's accident rate has increased during the project, due to changes and growth in the business.

4.4 Results of the analysis of the report forms

The 49 forms from the initial pilot study were entered into a database and provided an initial assessment of the workings of the new system and the practical issues involved in reporting and recording commercial vehicle accidents. From this analysis, it was decided that a second longer-term pilot study was also required, which analysed 216 report forms in total.

The report forms from both pilot studies were analysed in two main ways:

1. Quantitatively on the patterns shown in the data. The aim of this was not necessarily to draw any overall conclusions based on the data but to show its potential and any problems that may exist.

2. Qualitatively.

4.4.1 Quantitative analysis of the patterns shown in the data from the two pilot studies

The analysis in this section follows the structure of the accident report and investigation form in Appendix 4.2. It is not meant to be exhaustive nor particularly representative of any wider situation, but to provide a feel for what is possible. It is also used to evaluate the pilot system on a question-by-

question basis and to introduce the nature of company vehicle accidents. Much more detail on all this analysis is available on request from the authors of the report.

4.4.1.1 Accident report form

The **management information** section of the report form was completed well on most of the initial 49 forms. The majority of accidents were 'damage only' (93 per cent), with fire (per cent) and theft (2 per cent) making up the rest. Managers only attended the scene in a minority of cases (<5 per cent). A similar pattern emerged in the second pilot study.

The following key findings emerged from the analysis of the **driver information** section of the report form:

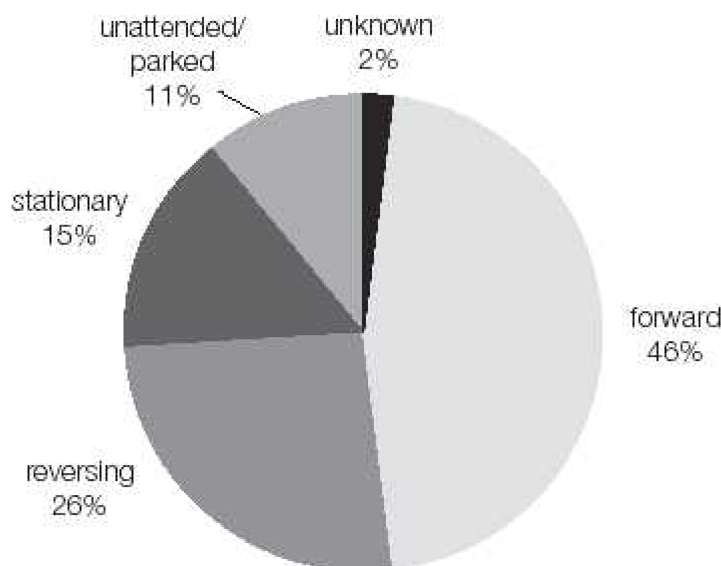
- in the initial pilot study, all the drivers were male, in the second 98 per cent. In the second study, driver age ranged from 21 to 71, with an average of 40;
- in the initial pilot study, delivery/collection of goods made up over 75 per cent of the responses to the *'purpose of journey'* question. Three accidents were recorded as 'parked', three as 'shunting' accidents, one 'trunking' and one 'company business car'. Parked and shunting were not actually options in the coding! Parked is now included under *'manoeuvre'*. Shunting is a constant operation in all depots and should be added to the *'purpose of journey'* coding options. The 'bus journey types' included may be better coded separately. A similar pattern emerged in the second pilot study;
- in the initial pilot study, 30 (61 per cent) of the drivers were employed full time and 16 (33 per cent) were agency or contract drivers. The name of the agency was recorded in 13 cases, although not always the office location. In the second pilot study, 77 per cent of the drivers were full-time and only 8 per cent were agency - mainly because the largest participant (transport company 6) does not use agency drivers. A range of other types of drivers made up the numbers in each case;
- in the initial pilot study, 35 of the 39 *'licence type'* responses were large goods vehicle (LGV). The coding was often ignored in this question. For example, 'full' was a common response. *'Driving licence number'* was not always consistently reported. A similar pattern emerged in the second pilot study. The space provided on the form was too small for the purpose. The *'valid for the type'* of vehicle question was left blank on several occasions in both studies. This suggests that the licence questions were not very well understood and that more guidance is required for drivers completing the forms;
- in the initial pilot study, 27 drivers had held their car driving licence in excess of 20 years, although 15 had been with the company for less than a year. A similar pattern emerged in the second pilot study where on average the drivers had held their driving licence for 19 years and LGV licence for 12 years, but had been with the company less than 3 years.
- in the initial pilot study, of the 32 drivers who recorded that they had received training or an assessment had done so within the past 12 months. In the remaining cases, the date coincided with when the driver passed his or her test. A similar pattern emerged in the 103 responses to the second pilot study.
- in the initial pilot study, 12 drivers admitted to making a single insurance claim and 5 admitted to having made more than two claims during the past five years. Fourteen drivers admitted to having had one or more accidents. Ten drivers admitted to having had motoring offences, convictions or fines during the past five years. In the second pilot study 30 admitted to making a single insurance claim and 23 admitted to having made more than two claims during the past five years. 69 drivers admitted to having had motoring offences, convictions or fines during the past five years. No medical conditions were reported during the initial pilot study and only two (high blood pressure and 'glasses') during the second; and
- the *'shift start and end time'* data is discussed in relation to 'accident time' in the section on details of accident below.

Where employee turnover and seasonality are low, a large majority of the driver information could be stored in, taken directly from, or verified against, an employee database. Data protection issues need to be clarified. This could easily be integrated with a vehicle database.

The following key findings emerged from the analysis of the **company vehicle and property information** section of the report form:

- artics, rigids and vans were the main *'vehicle type'* involved in both pilot studies. In some cases there was confusion as to whether to select the 'artic', 'tractor/unit' or 'trailer'. 'Artic' should be chosen whenever a tractor/unit is operating with a trailer. 'Trailer' should be changed to 'trailer only' and apply only to accidents where the trailer has been damaged. 'Tractor/unit' should be changed to 'tractor only' and selected only if it was operating without a trailer. The 'bus' types included may be better coded separately;
- for *'vehicle make and model',* both pilot studies showed the need to standardise data entry. For example, Leyland, DAF and Leyland DAF may all be the same make. This data is most useful in individual organisations and can aid decisions on vehicle selection;
- *'vehicle year'* was quite often left blank in both pilot studies, but the majority of the vehicles were less than 3 years old;
- in the initial pilot study, two *'defects'* were reported and in the second pilot study, there were 16. This question appeared to be well completed when the code sheets had obviously been used. When it was clear that the code sheets were not used, it was common for the damage sustained in the accident to be listed as a defect. There is a strong argument for removing this field, as it rarely occurs and if it does will be identified in the description and investigation;
- *'direction of vehicle travel'* was not particularly well completed in the initial pilot study. For example, in one case 'north' was recorded and in other cases the name of the destination instead of the required 'forward', 'stationary' or 'reversing'. It was, however, possible to calculate the direction from the accident description and/or diagram in these cases and it provides a great deal of useful information (Graph 4.1). A similar pattern emerged in the second pilot study, with 47 per cent going forward and 38 per cent in reverse. This field will be merged into *'manoeuvre'* to make it more clear;

Graph 4.1 - Direction of vehicle travel



- for *'damage to vehicle and property',* 'other' was the most common response in both pilot studies. The coding sheet was not used regularly and it was more common to see a written description. The damage coding list was inadequate, despite containing 17 damage codes, because multiple damage often occurred and because property damage was not included, hence the use of 'other' by many respondents. A *'type of property damage'* coding could be developed, however, this question would appear to be better dealt with by drivers writing in the damage as free text rather than a code;
- several participants began to issue cameras for *'photographs'* during the project. Photographs were taken for 52 of the 216 accidents in the second pilot study; and
- *'extent of damage'* was either coded or could be worked out from the damage description. 'Slight and moderate damage' were recorded for a large proportion of the accidents in both pilot studies.

Where seasonality and vehicle turnover are low, a large majority of the vehicle information could be stored in, taken directly from, or verified against, a fleet database. This could easily be integrated with a driver database.

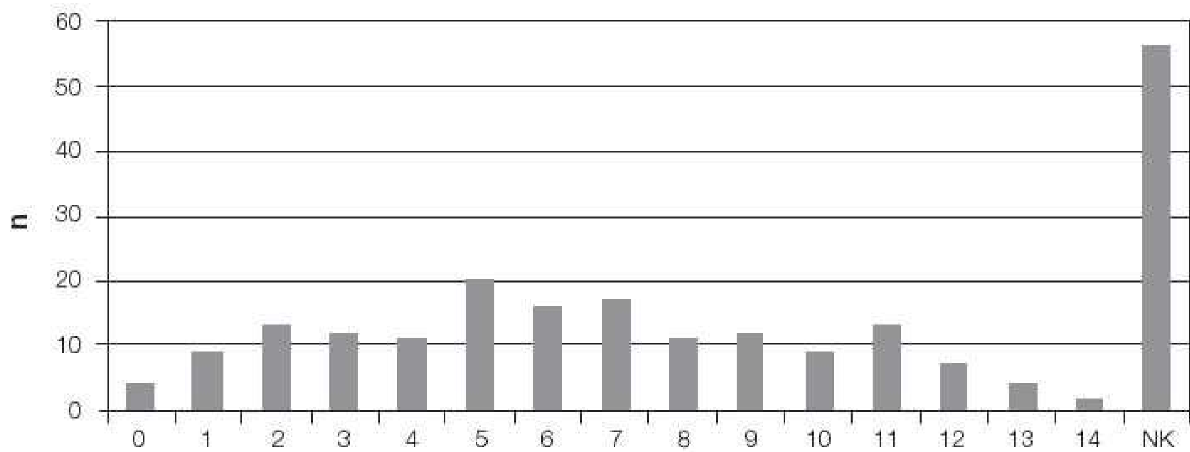
Several of these findings also apply to the next section of the accident report form on **damage to other vehicles and property,** which is mainly collected for claims management and repair purposes. The following key findings emerged:

- in the initial pilot study, other vehicles were involved in 20 of the 49 accidents and damage to property was recorded 16 times. A third party vehicle was involved in 106 of the 216 accidents in the second pilot study. The beginning of this section of the form could be improved by showing that a third party was involved and, if so, whether the damage was to a vehicle, property and/or person. This should be included when the system is updated; and
- *'defects'* were usually recorded as 'none' or 'unknown' in both studies. It is unlikely that defects on a third party vehicle would come to the attention of the driver or company unless there was a detailed claim, investigation or court case. For this reason, there is a strong argument for removing third party vehicle defects from the form.

The following key findings emerged from the analysis of the **accident details information** on the accident report form:

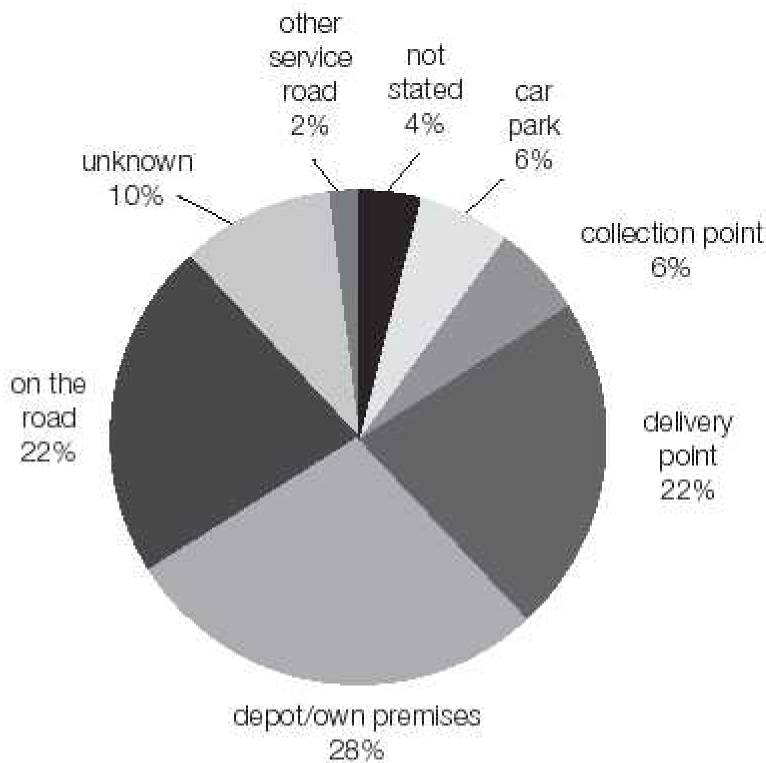
- the *'time'* data followed the working day in the second pilot study, with 69 per cent of the accidents between 6am and 6pm. For another 15 per cent of the accidents the time of day was not recorded. In many other cases, it was not given in the requested 24-hour format but was generally easy to convert. This raises an important coding issue in that standardisation, coding and checking are probably best undertaken centrally at the data entry stage. When accident time is entered onto the database, the codes 1-24 should be used to allow ease of data entry and subsequent analysis. A similar approach is also recommended for day (Monday - Sunday), month (January - December) and date (1-31);
- the *'time'* data was also compared to the *'shift start time'* data in the second pilot study, to give a feel for the time into shift at which the accidents took place. No clear pattern emerged in the data in Graph 4.2, other than that in over 50 cases either the shift time or accident time was not known (NK). It is also interesting that there appear to be some very long shifts being worked by drivers;
- No obvious pattern emerged in the *'day'* and *'date'* data;

Graph 4.2 - Time into shift



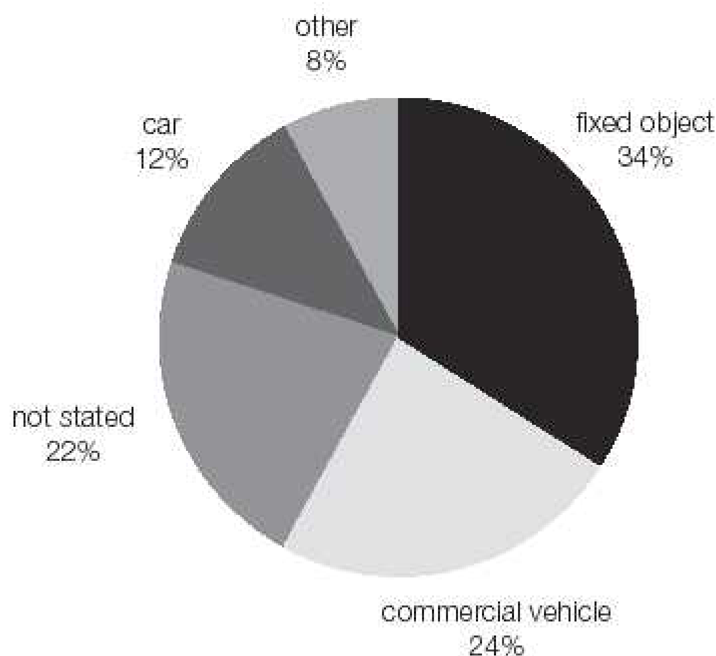
- *'location type'* (Graph 4.3) was either given or derived from the description and sketch in the initial pilot study. A similar pattern emerged in the second pilot study, suggesting that there is an overlap between road traffic and occupational health and safety issues;

Graph 4.3 - Accident locations



- accident location (including *'location type', 'town name', 'road name'* and *'road type'*) is important for identifying blackspots and targeting risk assessments. These questions did, however, cause some confusion in the pilot study, which shows the need for the person completing the CoVIR forms (and entering the data onto a database) to undergo training on what is required. Participants were particularly confused for the large proportion of manoeuvring accidents in tight spaces, often in congested depots or delivery and collection point areas. This could be improved by adding an 'on-site' option to the *'road type'* question or, preferably, merging and re-coding the *'location type'* and *'road type'* questions. This will help to code both on- and off-road accidents;
- *'travelling from and to'* appears to be mainly used by the bus industry, but no bus operators were included in either pilot. It could also have some potential use in more detailed investigations of individual accidents, but will be excluded from this version of the final system;
- Graph 4.4 shows what the vehicles collided with in the initial pilot study. A similar pattern emerged in the second pilot study, although the proportions for cars and commercial vehicles were reversed;

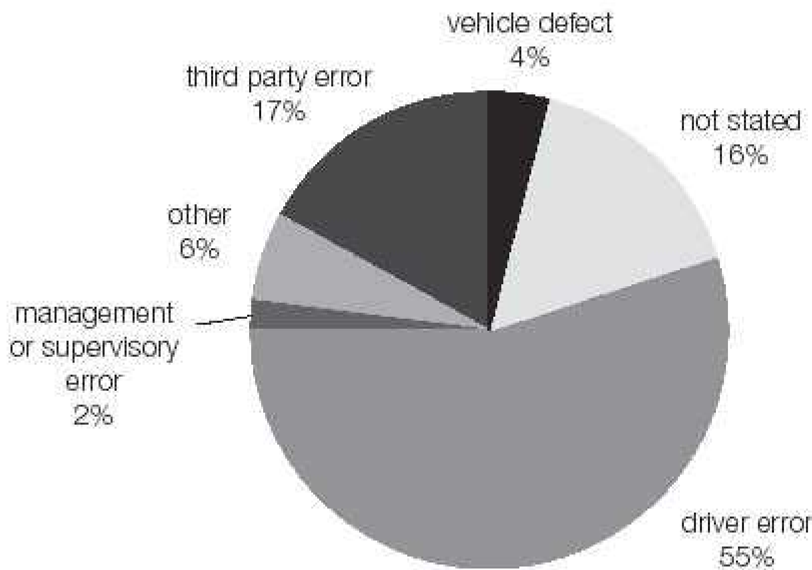
Graph 4.4 - Collision with



- the *'traffic conditions'* coding proved unsatisfactory in both pilot studies, partly because it is quite subjective and partly because a large proportion of the accidents occurred off-road. Several forms used 'congestion' to report a high density of parked vehicles and obstacles at delivery and collection points. In the revised system, the existing codes should be rationalised, simplified and two others added: 'on-site congestion' and 'not applicable', or the question could be removed;
- 'slow speed manoeuvre' was the most frequent *'manoeuvre type'* for the participants' vehicles, in both pilot studies. Several participants stated 'shunting', which could be added to the codes to enable on-site shunting accidents to be included. *'Direction of travel'* will be merged with this field. Even though the majority of the accidents were at low speed in both pilot studies, the data suggests that drivers may have a tendency to over estimate the third party's 'speed' and under estimated their own;
- for *'speed limit on road'*, responses for on-site accidents were split between recording the on-site speed limit or 'not applicable'. The handbook for the revised system should specify that the on-site speed limit should be recorded;
- responses to the *'road width'* question in both pilots included 'not applicable' (often onsite accidents), normal and numbers of feet, metres or lanes. For the majority of on-site accidents it was left blank, which suggests that the question could be improved for this type of accident, which often takes place at congested or tight sites. In the revised system, this should be catered for by the previously suggested changes to the *'traffic conditions', 'location'* and *'road type'* questions;
- on-site accidents were also a problem for the *'road configuration'* question and could be improved by the addition of a code for 'on-site', 'depot' or 'delivery/collection point'.
- the *'road condition'* for the majority of the accidents was dry in both pilot studies. There was some confusion by participants as to whether 'road conditions' and 'weather' are the same and *'visibility'* and *'light conditions'* are the same? There may be some scope to rationalise these fields;

- the *'drivers' statement of cause/avoidance'* question was often used to try to move the blame away from the driver, for example, *'the delivery area was congested'* or *'the third party was parked illegally'*. Comments as to how the accident could have been avoided focused on drivers being more careful, third parties being more understanding of LGV needs in terms of space and time and improved road or site layouts; and
- the *'driver's views of the main cause of the accident'* from the second pilot study is shown in Graph 4.5. This question could be improved by basing it on the Haddon Matrix (Williams 1999) and including driver error, third party error, vehicle defect, road/site layout, manager/supervisor error and other. The 'others' are mainly those where multiple causes were selected.

Graph 4.5 - The drivers' views of the main cause of the accident



The **driver's description and sketch** sections of the accident report form were generally well completed in both pilot studies, although allowing more space for the description could improve the form.

The **Police, injury and witness** questions will generally only be completed for larger personal injury and on-road accidents. Despite taking up a quarter of the whole form, this section was rarely used because a large proportion of the accidents in both pilot studies were minor damage only with occasional third party involvement and no reported personal injuries. In some cases personal injuries may not be entered on the report form, because they only become known later - when an insurance claim is made. Only 6 and 20 of the accidents in the initial and second pilot studies were actually *'reported to the Police'.* Witness details were included on 27 of the forms in the second pilot study. This section was allowed extra space to cater for bus operators - but there were no bus operators in either pilot study. This page could be substantially rationalised and the space used to include some of the codes on the actual form - although participants had mixed feelings about this.

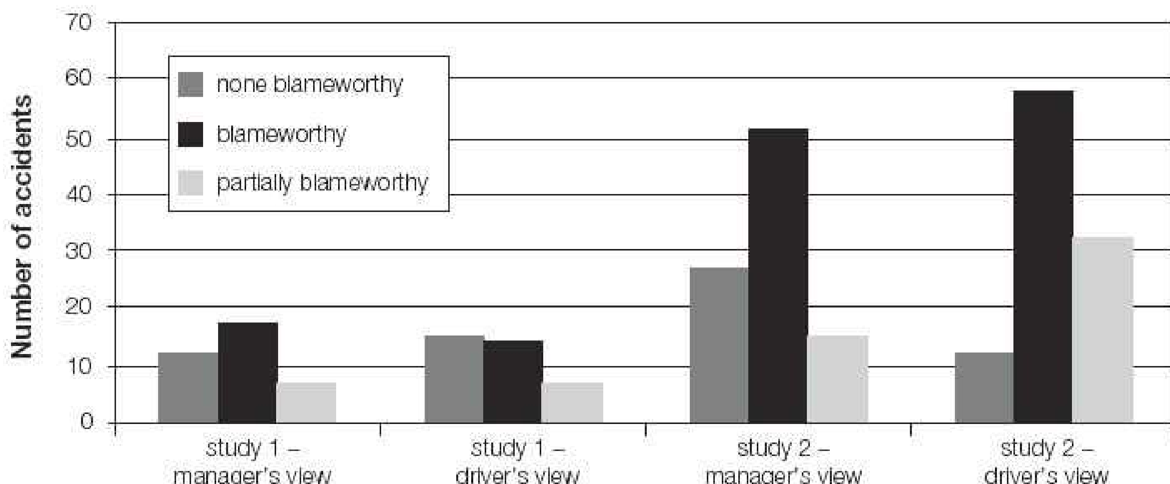
4.4.1.2 Accident investigation form

The following key findings emerged from the analysis of the **accident investigator information** on the accident investigation form. Transport company 6, the participant to submit the largest number of report forms in the second pilot study, rarely used the investigation element of the system, which means that there were fewer responses than for the report form questions.

- The range of job titles of the interviewers in the two pilot studies included distribution manager, managing director, operations manager, plant and transport engineer, project manager, parcel delivery manager, team leader, traffic manager, traffic operator, transport controller, transport manager and transport supervisor. This suggests that the majority of the people undertaking the investigation interview with the drivers were operational staff, with the exception of the managing director of one relatively small company.
- The bumpcards were rarely used in the initial pilot study and only for 32 of the accidents in the second pilot study. They were most appreciated by those participants who did not already have their own. They were not used for a range of reasons: some participants preferred their own bumpcard, which was already tailored to their needs, drivers had not been issued with one (particularly agency staff) or trained in how to use it, and many of the accidents did not involve a third party.
- The main reason for cameras not being used to photograph vehicles and the scene in the initial pilot study was that most participants did not have a policy to issue them to drivers. They were felt to be a good idea, however, and most of the participants in the second pilot study were using or planning to.
- The minimal number of tachographs examined in each pilot study were felt by respondents to be within the law. Particularly for larger accidents, much more could be made of the information from the tachograph.
- There was a range of agreed explanations of why the accident occurred, ranging from third party error, through poor manoeuvring, to problems at delivery and collection points. This question was often used to list mitigating factors that had made the driver's task more difficult, as well as identifying what happened.

Graph 4.6 compares the manager' and driver's view on whether the driver is 'blameworthy' or not. It backs up previous findings by Murray and Dubens (2000) that fleet drivers are typically at fault in about two-thirds of their accidents.

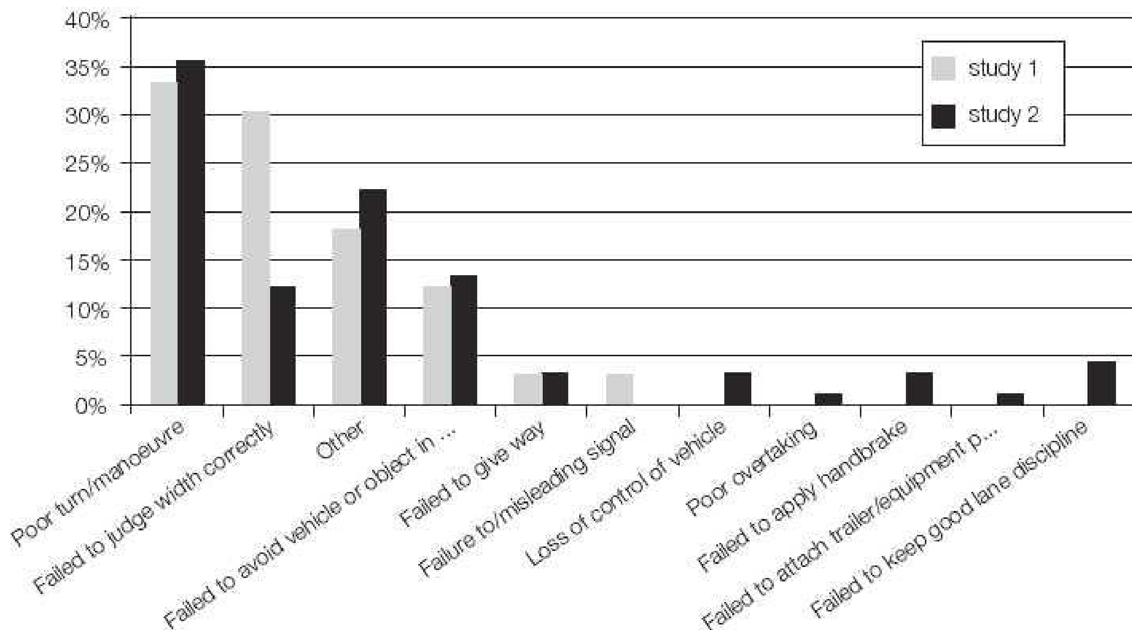
Graph 4.6 - Was the driver to blame?



The following key findings emerged from the analysis of the accident type and actions to be taken information on the investigation form:

- the 'accident types' question was generally completed reliably in both pilots. On some occasions, however, 'other' was selected when an applicable code was available. Most participants selected 'A-definite' to show that they were confident in their answers to this question, as they did for the 'precipitating and contributory factors' questions below. A large proportion of the accidents involved slow speed manoeuvring;
- participants appeared to have struggled more with 'precipitating factors' (Graph 4.7), often selecting 'other', or not completing it (16 in the initial pilot study and 126 in the second).

Graph 4.7 - Precipitating factors



- the 'precipitating factors' codes were designed by the TRL to capture on-road accident data (see DTLR 1977 and Broughton 1998). It may be prudent to seek further guidance from TRL about how to treat accidents that are sometimes off-road and typically slow speed manoeuvres, including reversing in tight spaces and hitting parked vehicles or fixed objects. Should they be recorded as 'poor turn/manoeuvre', 'failed to judge width correctly' or 'failed to avoid vehicle or object in carriageway'? Participant responses to this question also suggest the need for a training programme for the people who will be completing the forms and coding the information;
- participants found the 'contributory factors' question difficult because of the large number of options and sub-headings. In some cases a sub-heading was selected in error and, in others, several different codes could easily be chosen. For example, the 'inattention' code was not used by any participant in the initial pilot study but arguably could be applied to most of the forms submitted. It was the second most popular code in the second pilot study. As with the codes for 'precipitating factors' there is a strong argument that the TRL-based system is an 'overkill' in this context and it may be more prudent to use a coding system for 'underlying causes' that is based on systems already used by several fleets (see Appendix 4.5);
- responses to the 'how could the accident have been avoided?' question can be summarised as 'drivers should take more care and use less speed', the need for 'better management and staffing of delivery areas' and 'third parties to take more care when sharing the road with LGVs';

- 'action to be taken' should be seen as one of the key elements of the research as it formalises the process of managers identifying actions to prevent the accidents re-occurring and is the final element of the accident reporting, investigation and recording form. Participants recorded it in six main categories:

1. Undertaking site, delivery and collection points risk assessments to re-evaluate site layouts, on-site congestion and safety systems.
2. Preparing delivery guidelines for drivers.
3. Improving the training of warehouse and delivery point staff to deal with delivery vehicles.
4. Driver reassessment and training.
5. Driver discipline.
6. Undertaking more detailed investigation at the accident scene.

The 'sign-off ' date can also be useful for analysis as a process measure. By comparing it with the accident date the 'time to report' can be calculated.

Overall, the analysis of the form has provided a good description of the two pilot studies and offers a range of areas for further attention to be focused on.

4.4.2 Qualitative analysis of the report forms

Several qualitative conclusions emerged from the report form analysis:

- poor use of the available coding with drivers and managers not using the manual or coding card for the questions requiring codes, ignoring the coding or not using it to its fullest extent. Some participants tended to select 'other', when applicable coding was available and, therefore, misinterpreted what information was required for these questions;
- problems existed with the coding and form, particularly in relation to off-road accidents. Delivery and collection point accidents involving 'backdoor congestion' were a common problem but the coding was more applicable to on-road accidents. 'Hit fixed object' is one example that is quite difficult to code based on the current accident types;
- yes/no answers being left blank on the form. It was generally assumed that a 'blank' was a 'no' or a 'not applicable';
- contradictory evidence being given on the report and investigation forms and no verification or checking of this being undertaken. The same drivers sometimes gave different information about themselves on different forms. For example, one driver went from holding his licence for 10 years to 15 within the space of two months; and
- some forms were incomplete and the investigation form was not used or not signed off, particularly by transport company 6.

Some of these problems are clearly due to the newness of the system. Overall, however, the findings suggest that the system needs some rationalisation, re-coding and tailoring to operation types.

1. The fact that many participants did not appear to have read the manual very well or used the coding card suggests that the manual could be improved and that extensive training is required for users, including drivers and managers.
2. Good design will be important to allow ease of use of the final system.

3. The next version of the system should involve the drivers themselves in a minimal amount of coding and provide extra space for them to describe events in their own words. This will allow more standardisation, accuracy and consistency in coding the data. The final coding and verification may be best done after the investigation when the data is being added to the company's accident database by staff trained for that purpose.

4.4.3 Analysis of the data from transport company 3

Transport company 3 was the most proactive participant, and adopted the system in full across the whole organisation. It provided its claims database, which was structured slightly differently from the forms provided by other participants. It is analysed separately to give a deeper insight into one participant.

Transport company 3 is a medium-sized transport and logistics service provider offering distribution, warehousing, home delivery, international logistics and a range of other services. The data presented below relates to its British-based transport operations, which are mainly operated on a dedicated contract basis for a range of high street retailers, well known manufacturers and other organisations. As shown in Table 4.2 it operates approximately 360 vehicles and 130 trailers, driven by about 500 staff supported by temporary and agency drivers. Given the nature of the work, particularly delivering to retailers in urban areas, many of its delivery points are fixed which means that they can be risk assessed and managed. The business is, however, highly seasonal meaning that a great deal of flexible temporary labour is required.

The database provided includes all of transport company 3's different types of insurance claims, as shown below in Table 4.3. In this section, some of its data errors are purposefully included to highlight the importance of data accuracy and data cleaning.

Table 4.3

Type of claim

Type of claim	**Total**
Motor vehicle	596
Employer's liability	57
Goods in transit	35
Public liability	25
Property damage	8
Total	**721**

The following analysis focuses only on the 596 motor vehicle accidents.

Table 4.4 shows that most of the drivers were either full-time employed or from agencies. The seasonal nature of the company's retail contracts with Christmas, summer and mid-season peaks means that agency drivers are a necessity. No exposure data is available to compare hours or shifts worked by the agency drivers, but the data hints that there could be a problem with the use and management of agency staff.

Table 4.4

Employment status

Employment status	**Total**
Full-time employee	337

Agency	217
Managerial/Director	8
Contract	2
Other	5
Not stated	27
Total	**596**

Table 4.5 shows the agencies whose staff were involved in accidents. Agency 1 is the company's own driver agency - which is likely to be the biggest supplier. The fact that there were over 40 agencies involved also suggests that there may be some scope for rationalisation and developing closer working relationships with a smaller number of suppliers, although the locations of the contracts may mean that this is not possible in all cases. There are also several typing errors/differences in the database which means that the data is not as accurate as it should be and could lead to some suppliers appearing better than they actually are.

Table 4.5

Agency name

Agency name	**Total**
Agency 1	75
Agency 2	11
Agency 3	10
Agency 4	9
Agency 5	8
Agency 6	7
Agency 7	7
Agency 8	6
Agency 9	5
Agency 10	5
Other (5 or less accidents)	**74**

Information from the 'accident date' and 'form received date' fields can be used in several ways.

Table 4.6 and Graph 4.8 show the month and year of all the accidents in the database. They show a large year-on-year increase between 2000 and 2001, because there is a full year of data for 2001, but only half a year of data for 2000 - as the initial CoVIR pilot project started in June 2000. The lack of exposure data for the comparable months of September, October, November and December makes it difficult to draw any conclusions from this data. The company's accident rate has reduced from 1.6 in 1998 to 0.8 in 2002 because it has used the accident data to improve their driver assessment and training and to specify more appropriate shorter wheel based vehicles and urban artics for urban deliveries.

Graph 4.8 - Month-by-month comparison of accident numbers

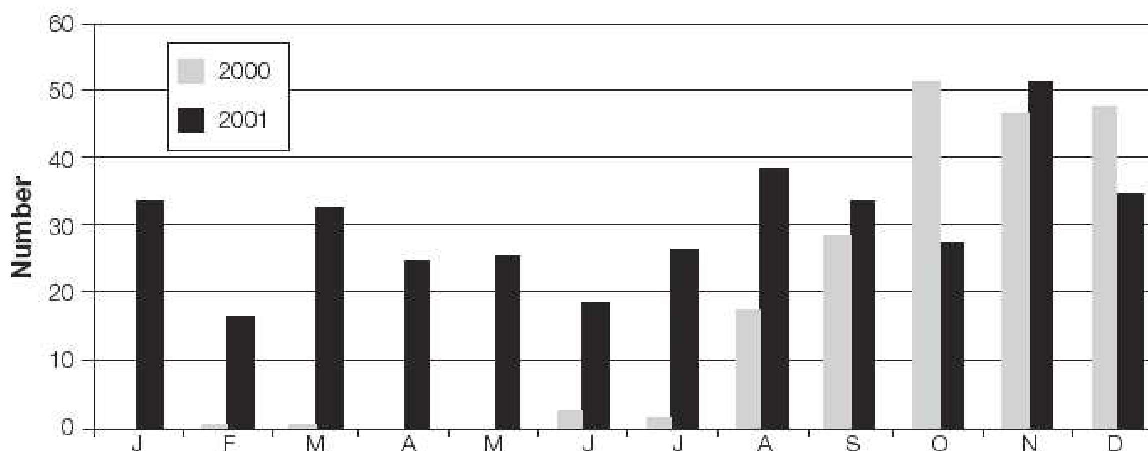


Table 4.6

Accident dates

Month	**1999**	**2000**	**2001**	**2002**	**?**	**Total**
January		34	16			50
February		1	17			18
March	2	1	33			36
April			25			25
May			26			26
June		3	19			22
July		2	27			29
August		18	39			57
September	1	29	34			64
October	1	52	28			81
November		47	52			99
December		48	35			83
Not known					6	6
Total	**4**	**201**	**369**	**16**	**6**	**596**

Table 4.7 uses the date information to analyse the day of the week of each accident. Wednesday and Friday appear to have the most accidents, and as would be expected Saturday and Sunday the least. No exposure data is available to allow any conclusions to be drawn.

Table 4.7

Day of the week

Day	**Total**
Monday	96

Tuesday	102
Wednesday	120
Thursday	102
Friday	124
Saturday	30
Sunday	16
Not known	6
Total	**596**

By comparing the date of the accident with the date the claim form was received, it is possible to measure the effectiveness of an organisation's reporting and recording process. It is also important because the Woolf Reforms (discussed in Chapter 2) have been implemented to speed up the whole process. Slow reporting can lead to increased cost penalties, as well as increased third party and legal costs.

The company's target is 5 working days for the form to be sent from the depot to the risk management department and insurer. Table 4.8 summarises the time to report data. It shows an average of 22 days, but a range of 0-820 days and lower median and mode values. This suggests that several outliers may be affecting the average figure. For this reason more detailed frequency analysis was undertaken (Graph 4.9).

Table 4.8

Time to report data (in days)

Time to report	**Days**
Average	22
Standard deviation	56
Minimum	0
Maximum	820
Count	551
Median	10
Mode	7

Graph 4.9 shows that the largest proportion of the accidents were reported within 1-10 days or 11-50 days. A small number of accidents were reported on the same day and several others took more than 50 days.

Graph 4.9 - Time to report

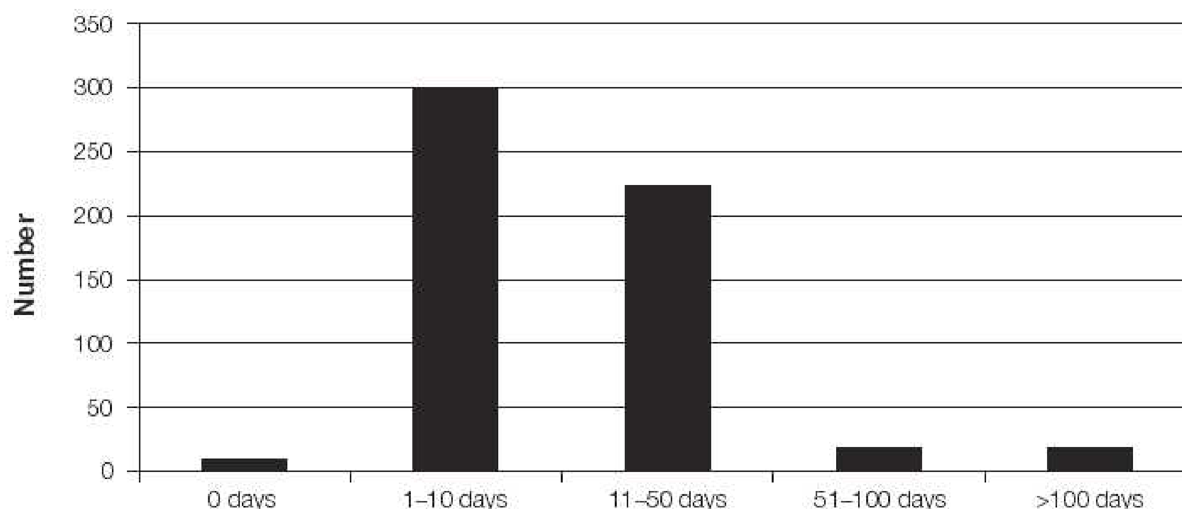


Table 4.9 summarises who was considered to be at fault in the accidents. Data from other fleets (for example Murray and Dubens 2000) shows a similar pattern to the data in Table 7, where the company is at fault in approximately two-thirds of the accidents.

Table 4.9

Fault

Fault	**Total**	**%**
Yes	377	63
No	161	27
Not yet decided	34	6
Not applicable	4	1
Not known	20	3
Total	**596**	

'Vehicle registration number' is useful for verifying the accident and evaluating whether a vehicle is the right one for the job or if individual vehicles have any recurring problems. Several of the vehicles in Table 4.10 have been involved in multiple accidents, and may be worthwhile to review the individual accidents involving those vehicles. Many of them appear to be vehicles that operate on an urban retail delivery contract, where the vehicles are double shifted and work in very confined spaces at delivery points. Some work has already been undertaken to change the specification of these vehicles, undertake store risk assessments and to persuade the customer to train their retail staff as 'banksmen'.

Table 4.10

Vehicles involved
1 vehicle was involved in 9 accidents
1 vehicle was involved in 8 accidents
1 vehicle was involved in 5 accidents

13 vehicles were involved in 4 accidents

24 vehicles were involved in 3 accidents

79 vehicles were involved in 2 accidents

286 vehicles were involved in 1 accident

For 6 accidents the vehicle involved was unknown

'Claim status' is a useful process measure to evaluate the effectiveness of the claims management system. In this case, Table 4.11 shows that only 10 per cent of the claims have so far been settled.

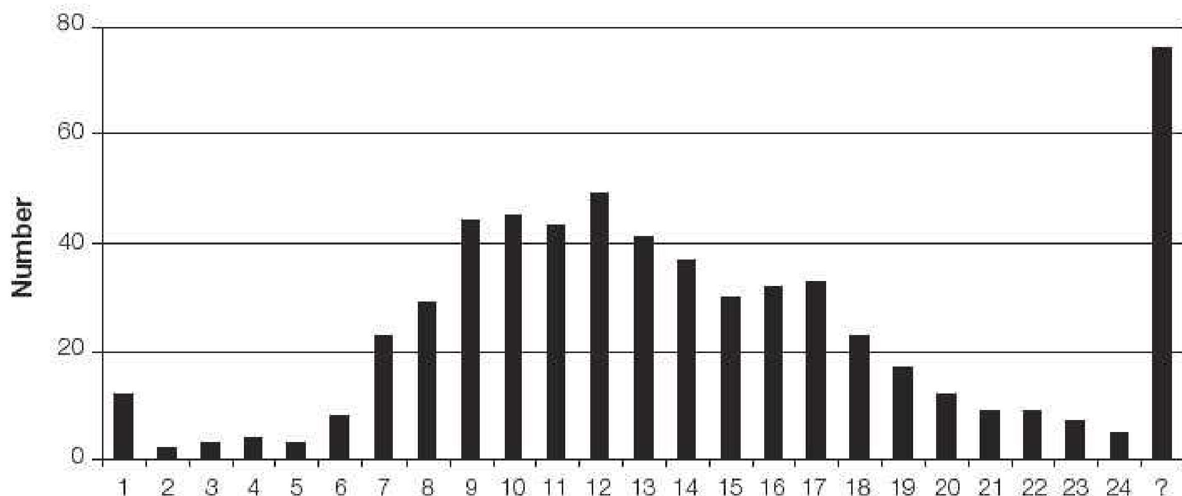
Table 4.11

Claim status

Status	**Total**	**%**
Outstanding	534	90
Settled	60	10
Not stated	2	0
Total	**596**	

The time of day that accidents take place is an important measure because it allows some attention to be focused on fatigue issues and can identify the most relevant and targeted times for assessment and training to be undertaken. In Graph 4.10, the accidents appear to follow the 'normal' working day. Ideally, this would be compared with the exposure data for the operation. It also shows that time was not recorded for 76 (13 per cent) of the accidents. This suggests that more could be done to improve the recording of the data.

Graph 4.10 - Time of day of the accident



'Accident location' is one of the key elements of risk management information that can be taken from insurance data. It allows countermeasures such as risk assessments, vehicle selection, site layouts, training and delivery guidelines to be targeted at problem areas. In this case, several patterns emerged. Coding company depots is a problem. For example, one depot comes up in three or four different ways. As well as its own depots, it has identified collection and delivery points as a problem area and set up a field in its database to identify this. As Table 4.12 shows, 25 per cent of the accidents took

place at these locations. This suggests that as well as the actual location it would be useful to code location type (that is depot, on the road or collection and delivery point).

Table 4.12

Delivery and collection point accidents	
Delivery and collection point accidents	**Total**
No	449
Yes	147
Total	**596**

'Type of accident' (Table 4.13) is an important part of the claim form for risk management purposes. Slow speed manoeuvring and collisions at intersections or time of change (for example changing lanes) appear to be particular issues in this case. The coding in Table 4.13 is based on its insurer's system.

Table 4.13

Type of accident	
Type of accident	**Total**
Hit immobile property	129
Hit parked vehicle	67
Third party hit insured	66
Junction/roundabout collision	47
Reversed into immobile property	45
Reversed into third party	45
Third party into insured path	42
Narrow road collision	20
Miscellaneous	17
Hit stationary vehicle	16
Hit third party in rear	15
No knowledge of incident	15
Electrical	7
Our vehicle changed lanes	7
Near side collision (Overtake - Undertake)	6
Accident alleged by third party	4
Hit cyclist/pedestrian	3
Third party reversed into insured	3
Property damage	2
Vandalism	2

Car Broken into	1
Theft	1
Other	24
Not stated	12
Total	**596**

Poor *'weather'* is often cited as a factor in causing accidents. Table 4.14 shows the state of the weather in this case. It does not appear to be very well coded and combines *'weather'* and *'visibility'* into one field. No exposure data is available on weather conditions, but based on Table 4.14 it would appear that most of the accidents took place in good weather - meaning that poor weather may only have been a factor in a small proportion of the accidents.

Table 4.14

Weather conditions

Weather conditions	**Total**
Dry	228
Fine/sunny	91
Rain	80
Dull/overcast	61
Wet	11
Fog/mist	4
Icy	4
Unknown	4
Other	24
Not stated	90
Total	**596**

'Driver name' is an important field, for identifying risks, training needs and the targeting of resources. Table 4.15 shows that the 596 accidents involved at least 436 drivers. It also shows that in some cases the driver was unknown. There were several data entry and coding issues with this field - for example not known and unknown were both used as were 'unmanned', 'none', and 'not applicable'.

Table 4.15

Drivers and accidents
3 drivers each had 5 accidents
4 drivers each had 4 accidents
20 drivers each had 3 accidents
73 drivers each had 2 accidents
336 drivers each had 1accident
Driver was unknown in 15 accidents

Vehicle was unmanned in 8 accidents

In 18 cases, the same driver appears to have been coded in two or three different ways. This makes it possible to underestimate the extent of the problem of drivers being involved in multiple accidents. More standardisation and care about data entry appears to be required. One alternative to this problem is to use the driver's payroll or employee number to verify the name for employed drivers, for agency staff the driver's name would still be required to be entered.

'Driver age' and experience is an important risk management issue - as young and inexperienced drivers often have a higher accident rate. It is also important because of the growing problem of driver shortages (FTA 2001). Table 4.16 and Graph 4.11 summarise the data on driver age. More information could be recorded on experience in the company and driving the particular type of vehicle involved. Exposure data is required, to analyse the number of drivers in each age range. Data entry could be improved, as one driver was -12 and several others 0 years old! These figures are only shown to highlight the importance of data accuracy, and are not included in the average and standard deviation calculated for Table 4.16.

Table 4.16

Driver age (in years)

Driver age	**Years**
Average	42
Standard deviation	11
Minimum	-12
Maximum	67
Count	534
Median	41
Mode	38

Graph 4.11 - Driver age

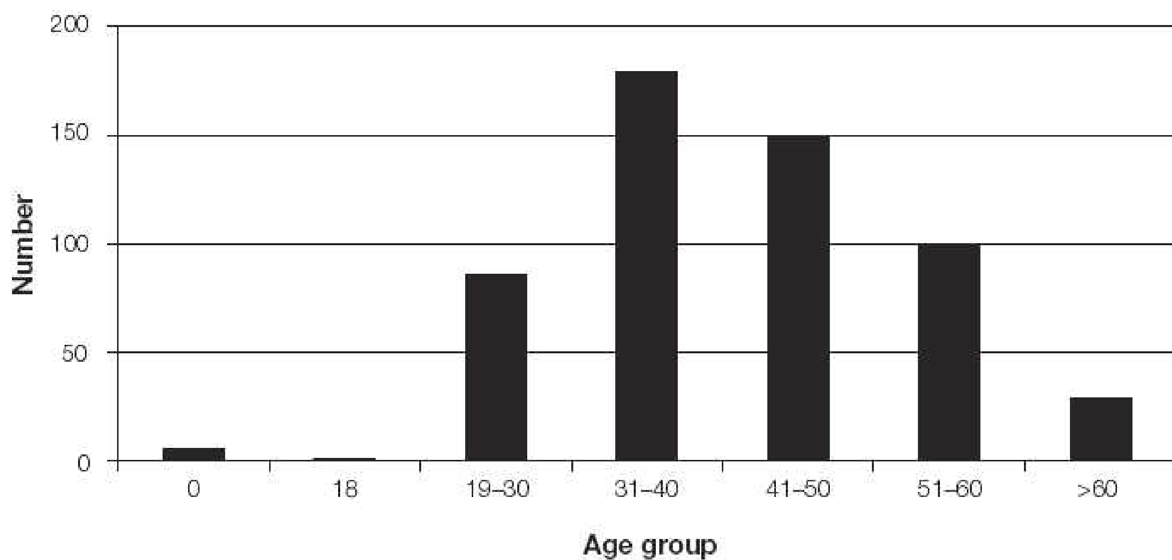


Table 4.17 shows which contract was involved in each accident and could be used to break down the analysis on a contract-by-contract or depot-by-depot basis. It is also useful to include the contract or depot manager's name, because it makes them accountable and take the issue seriously. More exposure data is required to understand how many vehicles are on each contract, the type of work they do and for how many hours. The data entry could also be improved as in some cases the contact number was put before the name and in other cases after it. The company itself do have more exposure data on the fleet, and provides a monthly KPI report to each depot/contract manager.

Table 4.17

Contract	
Contract number	**Accidents**
14	136
02	62
19	43
21	33
05	30
No number	32
17	29
16	28
15	27
03	26
11	23
04	20
01	18
08	13
13	13
12	12
18	12
23	10
07	9
25	9
22	6
24	4
20	1
Total	**596**

The data in Table 4.18 is an important process issue to help improve and speed up the claims and risk process. A high proportion of the claims forms were not completed correctly suggesting that there is some scope for improvement in this area. This would include better form design, improved staff training and guidance in how to use the form, code and then enter the data correctly.

Table 4.18

Claim form correct	
Claim form correct	**Total**
Yes	236
No	360
Total	**596**

'Vehicle type' (Table 4.19) can be used for several risk management purposes, including looking at vehicle selection and routing issues and developing tailored training programmes based on need. Clearly there are a few coding and data entry issues in this case, as vehicle make has also been included and there is a very high number of 'not stated'. This data should be consolidated and re-coded. Exposure data, for example on the number of each type of vehicle in the fleet and the type of work they are used for would also be useful information.

Table 4.19

Vehicle type	
Vehicle type	**Total**
Artic	227
Rigid (17 tonne+)	153
7.5t	63
Tractor unit	19
Car	17
Trailer	6
Draw bar	4
Van	3
Double deck	2
1	1
Forklift truck	1
Trailer 1052V	1
Volvo	1
VW	1
Not stated	97
Total	**596**

Like vehicle type, *'vehicle make'* (Table 4.19) can also be useful information for risk management purposes, particularly for aiding vehicle selection decisions. It appears that the data has not been

recorded as effectively as it could have been. For over half of the accidents the vehicle make was not stated and in many cases in Table 4.20 different information may have been entered for the same vehicle make, and once identified should be consolidated by re-coding the data. The Volvo vehicles are a good example of where consolidation is required in Table 4.20. The data has purposely been left in its original condition to show the importance of coding and consolidation.

Table 4.20

Vehicle make

Vehicle make	**Total**
Not stated	393
Mercedes	20
Volvo	19
Volvo FM12	18
Mercedes Actros	17
Volvo FH12	17
Iveco	9
Renault	9
MAN	8
DAF	6
Volvo FM	6
Scania	5
Volvo FL10	5
Ford Iveco	4
Renault Premium	3
Volvo FL6	3
Other	54

No clear pattern emerged in the *'damage to vehicle'* data, because vehicles often suffer multiple damage. This field is very difficult to code and is better left as an open descriptive field.

The *'registration number'* of the third party (Table 4.21) vehicle is important for claims management, but is less useful for risk management purposes. There is an increasing problem with fraudulent claims fuelled by the 'no win-no fee' legal system and analysing the data on third party registration may help to show up any 'recurring' claimants. In this case many of the accidents were single vehicle only, hence the large number of 'not stated', 'none' and 'not applicable'. The XXXX vehicles are shown because actual registrations cannot be used due to data protection.

Table 4.21

Third party vehicle registration

Third party vehicle registration	**Total**
Not stated	370

None	32
Not applicable	8
Unknown	3
XXXX	2
XXXX1	2
Registrations occurring only once	179

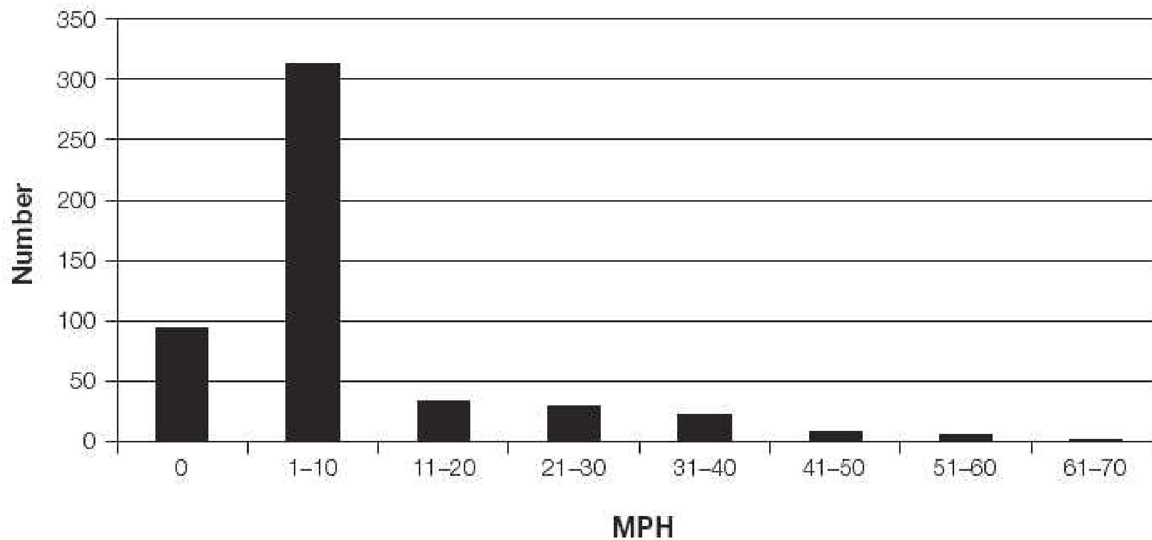
Table 4.22 shows the summary data on the speed of transport company 3's vehicles. Clearly many of the accidents occur at a relatively low speed. This is confirmed in Graph 4.12, where most of the accidents occur between 1-10 miles per hour. From a risk management perspective this suggests that countermeasures such as driver assessment and training should be particularly focused on slow speed manoeuvring and the areas in which its takes place.

Table 4.22

Vehicle speed (in miles per hour)

Speed	**MPH**
Average	8
Standard deviation	13
Minimum	0
Maximum	70
Count	507
Median	3
Mode	0
Not stated	69
Parked	12
Slow	1
Stopped	3
Unknown	3
Very slow	1

Graph 4.12 - Vehicle speed



Of the 596 accidents, ten involved an injury, 17 were reported to the Police and only two were photographed by the driver. This suggests that most of the accidents were relatively minor. All drivers have since been issued with a camera.

To summarise the situation with transport company 3, some of the existing data is good and has already been used for risk management purposes, but there is scope for improvement.

- In some cases, more exposure data is required for meaningful analysis.
- More of the data could be coded to improve standardisation and prevent errors.
- The investigation element of the process is used by the company's driver assessors on an accident-by-accident basis, but is not yet included in the database for more general analysis.
- Further training may be required for staff in the importance of accurate and full reporting and how to code and enter the data in the most effective way.

4.5 Results of the pilot study process evaluation

In the initial pilot study, a short mid-point evaluation questionnaire was sent to the participants via post and e-mail. This was designed to identify any early problems that might have been encountered and to assess initial impressions of the pilot material. Regular contact was maintained with participants by telephone and e-mail. A short end-point questionnaire was sent to participants for a final evaluation. All contact with participants was logged in a pilot study diary. For the second pilot study, a detailed endpoint evaluation was undertaken in the form of meetings and discussion with participants.

The outcomes of this process evaluation focus on the best features of the system, problems and areas for future development.

4.5.1 The best features of the system

The system was seen as a good starting point in moving towards a common standard approach throughout the industry. Its best features are that it raises awareness of safety issues for drivers and managers, promotes better investigation of accidents and provides more accurate and standardised risk management information through its coding. The following list is an amalgamation of the typical responses:

- a comprehensive, straightforward, clear and easy-to-follow system that allows a formal report and investigation, including a one-to-one interview with the driver. It ensures that drivers sit down and discuss their accident, giving managers a better picture of the circumstances. This means that more information is gathered giving greater scope for accident investigation and statistics and a natural foundation for a database. Managers who give a low priority to safety are forced to confront the issues of accident causation;
- the flowchart, bumpcard and accident codes provide a comprehensive procedure from the accident right through to the driver interview and investigation. The coding system makes completion of the form and collation of data much easier. By issuing a manual, the drivers are completing the forms more accurately. The system is also good for accurate uniform data collection and keeping accident statistics; and
- the investigation form was widely felt to be one of best parts of the project, except for the 'precipitating and contributory factors', which were confusing and difficult to code. An alternative fleet specific approach, based on the 'underlying causes' shown in Appendix 4.5, was suggested as more appropriate. Overall, the investigation provides a detailed formal process to allow the driver and manager to sit down and discuss the cause of the accident in-depth - without apportioning direct blame to the driver. This forces local management to investigate accidents, be more aware of the issues and take action.

4.5.2 Problems with the system and process

Several problems and issues were encountered with the documentation and process, particularly in relation to implementation and change, the length of the system, actually undertaking the investigation and coding. The following list is an amalgamation of the typical responses:

- the bumpcard is good but needs to be tailored more to the needs of the individual participant, for example, by putting the company stamp, details and possibly insurance number onto the tear-off slip for third parties. Drivers often forgot to carry the bumpcards or did not have the knowledge to answer all the questions;
- the report form is trying to be 'all things to all people', which also makes it too big. It is a little 'top heavy' with driver and vehicle information, rather than the detail/sketch of the accident. Most participants had different views about what should and should not be in it and whether it should try to cater for insurance requirements or not. Participants typically took from it the elements that were most relevant to them and disregarded less relevant elements;
- accident reporting and investigation is often a low priority for depot managers, behind getting the deliveries made. There was resistance to the extra documentation and to change. A typical first reaction was *'we've already got enough to do without interviewing drivers over every accident'*. The length of the report and investigation form and coding card means that the process is time consuming for both managers and drivers who may be discouraged from reporting and investigating accidents. On average, each form takes between 45-60 minutes if uninterrupted. This was felt to be too long. This also means that participants were not always able to find a member of management to conduct interviews or ensure correct completion of the forms;
- the practicality of debriefing and interviewing drivers based away from the depot for long periods, agency drivers and shift workers is a problem. Some managers and drivers also felt uncomfortable undertaking investigative interviews. For others self-analysis of causes was a problem because they were concerned over the disclosure of information for legal or claims reasons;
- there were process issues about who should complete the forms and code them. Some drivers did not realise that the investigation element of the form was for managers to complete. In an 'ideal' process, the driver completes the bumpcard at-scene, and then the driver and manager or supervisor complete the accident report and investigation form on return to base. The manager, centrally based claims handler or risk manager, should code and standardise the data for entry and analysis;

- most of the forms were well completed for familiar questions and codes, but not so well for 'new' or unfamiliar ones. The codes were very good for on-road accidents but could be improved for on-site accidents (where many of the accidents occurred). Several coding issues were raised including deciding which code to choose and only being able to select one code, particularly on *'damage type'*. Other suggestions were for more space on the report forms for licence details and boxes (rather than the current *italics*) for the coded questions. Good design will be an important element of any new system that develops out of the pilot study;
- the way the report form prompts accident investigation and corrective action is good but this should not delay the reporting of the accident to the insurance company. Perhaps it should be made clear that 'the completion of this page should not delay the document to our insurers'. This is because the timescale for the investigation may take 1-2 weeks depending on the circumstances and could delay the reporting process. For instance, if the driver does not admit responsibility and claims a vehicle defect it must be investigated by looking at the driver circle check and maintenance fitter's reports before answering such questions as *'how could the accident have been avoided?'* and *'what actions should be taken?';* and'
- implementation, training and changing people's attitude takes time, meaning that some participants struggled, or were unable, to implement the systems fully within the period of the pilot studies.

This feedback suggests several implementation issues need to be addressed to make improved accident reporting and recording work, as well as the requirement for some amendments to, and further rationalisation of, the new system. The best possible form design, as well as change management and user training, are key future issues in the implementation of a best practice vehicle accident reporting and recording system.

4.5.3 Areas for further development

Respondents provided a range of areas for further development. The following list is an amalgamation of the typical responses:

- more training and explanation is required about who should complete the forms and about how the information is required to be able to convert claims data into risk management information;
- add an area on the form to put insurance details, such as policy number and internal company information, the accident date at the top of the front page, and a 'control log' of the first notification of the accident;
- simplify some of the codes and make the design of the forms more attractive and easier looking for managers, for example, by adding boxes to indicate where codes are required and providing links between the codes on the report form and coding sheet;
- revise the codes to incorporate off-road/on-site accidents more effectively;
- rationalise the number of questions and the number of choices, particularly for accident types, precipitating factors and contributory factors;
- shorten the bumpcard and report form as much as possible;
- consider separating the investigation and report forms;
- provide a video or training pack as a way of introducing the system across a multi-site operation;
- provide advice on how to utilise and extract the data collected and analyse the forms. This could take the form of an IT-based system;
- provide 'aggregated data' and a benchmarking opportunity to participants; and

- undertake further study in conjunction with the insurers to achieve a less bureaucratic system and standardise insurance systems and forms.

This clearly shows that the forms should be refined further and some design work is required to make the system more 'user-friendly'. It also shows that some participants require more support in how to use the outputs from it. More research is required to develop an IT- or web-based system and standardise insurers' systems. User training is also a key issue.

As a result of the processes described in this chapter the report and investigation form, manual and coding card were all revised.

- The *'purpose of journey'* and *'cause of the accident'* coding were amended.
- More space was given to *'licence number'* and the *'driver's description of the accident'.*
- *'Vehicle defects', 'travelling to and from',* and *'traffic conditions'* were all removed. The coding for damage type was replaced with free text.
- The codes for *'direction of travel'* and *'manoeuvre'* were merged together as were the codes for *'location type'* and *'road type'.*

The latest post-pilot study versions are shown in Appendices 4.1 to 4.4.

Chapter 5 - Conclusions and recommendations

5.1 Project findings

1. From the **literature review** it is clear that the true nature and full extent of accidents involving company vehicles is currently unknown. Similar on- and off-road accidents are regulated separately by different agencies. The insurance system currently drives Company vehicle incident reporting and recording (CoVIR) in Britain and even though there is much best practice, both pre- and post-accident and a range of key performance indicators available, there are no current standards even in terms of how to define an accident. This means that it is very difficult to compare the performance of different organisations; some use a traditional insurer, whilst others insure themselves or use an accident management company. The literature has also shown that in other countries, particularly in Australia and the USA, more is done by policy makers at both the federal and state level to help vehicle operators improve their safety performance through voluntary and mandatory safety audits, which include accident reporting and recording. Such information could also be useful for licensing and enforcement purposes.

2. The **analysis of 80 report forms** used by British-based vehicle operators has helped to confirm many of these findings, particularly that there are no standards and that CoVIR is currently insurance- and claims-led and includes 'pre-accident', 'at-scene' and 'post-accident' information. Most of the forms were two sides of A4 in length but varied greatly in both content and quality, even though they collected very similar information (typically about the vehicle, driver, accident, sketch/description, third party vehicle/property, injuries, Police, witnesses and claims). The driver and vehicle information, particularly, would lend itself towards being part of an integrated relational database, but issues, such as data protection, seasonality, use of temporary labour and staff turnover, need to be considered further. As well as the report form, there are a range of other documents in use, particularly the 'at-scene bumpcard' and 'post-accident investigation form'. The extent to which the forms were coded for analysis varied greatly and the need to develop some standard accident codes has been identified. It was concluded that the ideal was for drivers to be able to describe what happened in their own words and for managers then to code this information for analysis. Current CoVIR systems show similarities to both the Health and Safety Executive's (HSE's), Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) and the Department for Transport's (DfT's) Stats19 systems, however, most of the accidents reported at the company level would never be recorded by either RIDDOR or Stats19, and so would fall outside the scope of any current national statistics.

3. The **company case studies** provide a detailed and wide-ranging insight into how organisations (including transport companies, manufacturers, retailers, accident management companies (AMCs), insurers, councils and bus operators) report and record vehicle accidents and the insurance/claims-led nature of their systems. A range of best practice has been identified. Examples include the development of accident codes, key performance indicators, process flow charts (Tables 3.8 to 3.11) and detailed accident investigations. Key issues identified included defining what an accident is, under- and incomplete-reporting by drivers, differences between vehicle types, and the importance of the relationship between accident and maintenance costs. The company cases also identified the importance of change management, compromise and taking a 'realistic' and practical approach as key elements for standardising and improving CoVIR.

4. The **questionnaire** analysis structured and aggregated the information from the case studies. It identified that almost half of the participants were professional transport companies. Participants averaged just over one accident per vehicle and per driver each year at an average cost of just under £1,000 each, although there are large variations in what individual companies actually record. Approximately half of the participants' accidents occur off-road, confirming the need to focus on both on- and off-road accidents. This also highlights the need for more integration and co-operation between different agencies, such as the DfT and HSE, in improving company vehicle safety, a point which many participants admitted there was scope for them to do.

5. The findings from the literature review, report form analysis, meetings and questionnaire fed into a **new accident reporting and recording system.** The system, which included a bumpcard, accident report and investigation form, coding card and user manual was used by 13 'active' pilot study participants, as well as being evaluated by several other companies for an initial 3-month period. It was then used and evaluated for a further 15 months by five organisations. Almost all of the participants in the two pilot studies have since adopted some or all of the system. The main benefits of the new system are in formalising the accident investigation process, standardisation and ease of analysis. Some examples of this analysis are shown in Chapter 4. This allows insurance claims data to be turned into useful risk management information. Its limitations are that it was seen as too long, too time consuming to implement and requiring some coding improvements (particularly in dealing with onsite accidents and underlying causes). User training, change management, form design, amendments/rationalisation of the system and using the outputs were all identified as key issues in the implementation of any new system.

The project has identified that there are currently many similarities between organisations, but few comparable standards. Current systems are typically claims- and insurance-led rather than risk management-led. The new system is still at an early stage of its evolution, which means that the experience gained to date should be considered as the beginning rather than the end of this area of research. Despite this, the findings have provided a major new insight into the key issues and best practice involved in company vehicle accident reporting and recording.

5.2 Project limitations

All research has limitations and there is always some scope for improvement. This project claims no exception to the rule and a range of limitations in its methodology and scope are acknowledged below.

5.2.1 Methodology

Verification of the findings is not easy. Some key elements of the project, particularly the meetings and the evaluation of the pilot study, were centred on opinion-based research and what people said rather than the facts and what they actually do. These may not be the same. In this type of research, it is impossible to know the extent to which participants were on their 'best behaviour', doing company PR and sanitising results so that the researchers see them as better than they actually are. At the meetings some participants were more candid 'over lunch' than in the open discussions. In the pilot studies, some participants gave excellent evaluations but had completed the forms in a very poor way. This may be partly a problem of senior managers being very keen on the concept but operations managers then being unable or unwilling to implement the system very effectively.

It is also possible that only those organisations with a positive attitude towards safety took part, meaning that to implement the system more widely would require a massive change management process. This suggests that the 'reasons for not taking part in the pilot study' in Chapter 4.3 should be considered in some detail because change management will be a key issue in the widespread implementation of a standardised accident reporting and recording system.

These two methodological concerns do not invalidate the results of the research but do suggest the need for more in-depth case studies and to triangulate the research findings through observation and more involvement with the day-to-day processes.

5.2.2 Project scope

Just by looking at the 'weight' of this final report it is clear that the project was extensive in its scope and possibly too general in its findings. This was despite the fact that there were no bus or car fleets included in the final pilot study. With the benefit of post-rationalised hindsight and the knowledge gained by doing the project, the development of a generic pilot system for all operation types can be seen as one of its limitations. Some coding and tailoring of the system to specific operational structures, particularly the self-insured, AMC users and those opting for the more traditional

broker/insurer system may have been appropriate. All these three approaches have similar information but often with a different emphasis and aims. If they are at-fault, the self-insured often want to settle claims and pay out quickly to minimise costs. AMC-based systems particularly focus on providing a service to the driver and costs. Insurance-based systems seek to avoid admitting liability at all costs. Covering all these systems with one new system may be impossible. In this case, the new system presented drew heavily on the report and investigation forms used by TNT, who are self-insured.

It was also found that, although there is a great deal of overlap, attempting to develop a system that was applicable to buses, as well as cars vans and trucks, was a limitation, especially in relation to questions such as *'purpose of journey', 'vehicle type'* and *'accident location'*. The *'personal injuries'* section of the form needs to be much more extensive, comprehensive and detailed for the bus industry because of the number of passengers that can be involved.

It is possible to make two conclusions based on this discussion of project scope.

1. There is a general core of information that is available in most systems. This then needs to be tailored to specific structural, operational and vehicle types.
2. It appears that a 'bolt-on' tool based around a number of relevant and standardised key performance indicators (KPIs) may be the best approach. This would allow relevant information to be extracted in a standardised way from all different systems and vehicle operator types, possibly without the need for a new system.

5.2.3 Omissions

Three main omissions were made during the research process. These were the failure to make contact with the Association of British Insurers (ABI), not focusing enough attention on KPI, and being unable to include either a bus or company car fleet in the pilot studies.

The importance of insurance in driving and shaping the accident reporting and recording process was recognised at an early stage of the project. With hindsight, the ABI was as an important group that should have been contacted. Involving and gaining the support of the professional bodies, particularly the ABI in this case, should be considered as a very important area for future study. They can play an important role in providing information, validating the new system or audit, and encouraging their members to support and implement the required change processes.

KPIs were identified as being important in the literature (Wright 1997, Murray and Dubens 2000, Boyle 1999 and Queensland Transport 1999) described in Chapter 2 and the meetings with companies discussed in Chapter 3. Much more should be made of KPIs, firstly to validate that those identified are the correct ones and then to begin to use them to monitor performance. This is an important area for further study, as accident reporting and recording should be tailored to provide information on all the relevant KPIs. It would also be useful to look at Health and Safety-based KPIs as well, as they tend to focus on lead or proactive indicators as well as the more typical lag or reactive indicators identified throughout this project. Some examples are shown in Appendix 5.1.

No bus or company car operations were included in the pilot studies. Three bus fleets were included in Chapter 3 all of which had very thorough systems in place. One of them was taken over by another during the project, and neither could take part in the pilot due to the change processes that the take-over necessitated. The third did not respond to the request to take part in the pilot study. With hindsight, they should have been courted more rigorously as they already have a great deal of best practice in place from which other companies could benefit. Several operators of company car fleets were included in Chapter 3. Company cars are often managed separately from other vehicles because they are a 'perk' and driven by managers. In many cases, AMCs manage them externally. Several company car operators promised to take part in the initial pilot study but, apart from a few forms from one participant, no report forms were received. More focused research on company cars and buses is required.

All of these three areas of omission are important areas for further, more detailed, research that will extend the scope of this particular project.

5.3 Recommendations and areas for further work

These findings and limitations confirm that the research completed so far is only the beginning as all of the recommendations below on system revision, implementation issues and safety auditing are areas for further investigation.

5.3.1 Revising the new company vehicle accident reporting and recording system

The system has been developed and then re-coded, rationalised and refined during the project. **Some design work to make it as easy as possible to implement and use is now required.** It may also be prudent to develop a more bespoke form specifically for buses. This would have the same generic core of information as for vans, large goods vehicles (LGVs) and company cars but would include several bus-specific questions and coding, particularly for *'purpose of journey', 'route details'* and *'personal injuries'.*

5.3.2 Implementing the new company vehicle accident reporting and recording system

Improved CoVIR is very much a change management issue. Risk managers often do not have the direct authority to make operational managers act. Change management was raised by many of the participating companies. Issues of change must be considered when any new system is implemented. For example, the current culture of 'do not admit liability at all costs' will always lead to poor accident reporting and recording. Few insurance-led organisations will want to change this approach, however, nor will it be easy to persuade them to make wholesale changes to their existing claims-driven systems.

It is important to involve the insurers and insurance brokers, as well as accident management companies and the professional bodies (such as Royal Society for Prevention of Accidents (RoSPA), the Freight Transport Association (FTA), Road Haulage Association (RHA), ILT, Association of Industrial Road Safety Officers (AIRSO), Brake, and the ABI) in piloting and implementing standards. These organisations have a major influence over their clients and members. Insurers can do more than just manage the claims process, through proactive accident prevention and monitoring. They should be encouraged to play an important standardising role. It may be prudent, therefore, to circulate the results of the project amongst these groups for comments.

As well as change management there is an issue of training in the importance of accident reporting and recording and how to do it effectively. Training courses should be provided for senior and junior managers on why and how to implement and use the system, and for drivers into the importance of the process and how to complete the forms.

The implementation and change management issues discussed here, and throughout the project, suggest that implementing a self-audit and KPIs may be the best way forward, rather than trying to implement a whole new standardised system. The new system that has been developed could then act as a best practice guide to help companies improve their existing systems in areas such as structure or coding, or would be available for new companies and those with nothing already in place.

5.3.3 Vehicle accident reporting and recording self-audit and key performance indicators

Safety self-audits have been implemented in other countries, including Australia (Queensland Transport 1999) and the US, where the 'SafeStat' model of audits, inspections and violations (Savage and Moses 1994 and 1995[3]) has been a success. Based on Tables 3.8 to 3.11 and the KPIs described

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[3] Also more information to be found at the Federal Motor Carrier Safety Regulations website: www.fmcsa.dot.gov/rulesregs/fmcsr/regs/385appb.htm,

throughout the report, **a company vehicle accident reporting and recording self-audit has been developed (Appendix 5.1). This will allow vehicle operators a quick understanding of 'where they are now' and any gaps in their systems as a starting point. It will also help in developing a set of standards for all companies to work towards.**

Aiming for a standard set of KPIs would also mean that vehicle operators could maintain their existing reporting systems and processes, as long as it could provide the type of KPI information shown in Appendix 5.1, which companies typically monitor on a weekly, monthly, quarterly, six-monthly or annual basis. Initial dissemination of the self-audit could be achieved through a range of channels and could include an evaluation.

In the longer term, it would be possible for the accident reporting and recording audit to become part of wider and more formal system, like the American model, to be regulated by an agency such as the HSE.

5.3.4 Other recommendations and areas for further study

Amending the Stats19 form to include a field for 'purpose of journey' - business or domestic - would give the DfT a further insight into the extent of crashes involving vehicles being driven for work. Taking this further, Faulks (2001) is keen to examine the influence of Haddon's theoretical approach to road trauma reduction (the Haddon Matrix) and sees a need to extend the model to include 'purpose of travel' information. Currently, three broad aspects of 'purpose of travel' have been identified: road use for business purposes, road use for holiday and recreational purposes, and road use for lifestyle and maintenance purposes (for example shopping). Faulks wishes to explore the research, policy, and programme applications of this extension of the model to provide opportunities for combining concepts in road safety and workplace safety. An alternative purpose of journey framework has recently been developed in Britain, based on survey research undertaken by Stradling (2000) at Napier University. He suggested there are seven types of trip for which people use their cars.

1. Driving as part of work (64 per cent of respondents).
2. Driving to and from work (90 per cent of respondents).
3. Ferrying kids.
4. Life and network maintenance (for example shopping, visiting, evenings out).
5. Car as load carrier.
6. Holidays and weekends away.
7. Life enhancement activities (for example hobbies, driving for pleasure).

Further structures for purpose of journey also emerged during this project - based on analysis of the insurance forms and codes specific to the fleet and logistics and bus sectors.

Fleet and logistics	**Bus industry**
1. Business (company car)	1. Hired out
2. Delivery and collection	2. Motor trade
3. Personal/private	3. Non business
4. Shunting	4. On bus route
5. Trunking	5. On tour
6. Unknown	6. Out of service

7. Other (please specify)

7. Private hire

8. Unknown

9. Other (please specify)

Haddon (1980) argued that the accident sequence - pre-accident, accident scene and post-accident - interacts with human, environmental and vehicular factors to define the frequency and severity of injury (Williams 1999). According to Faulks (2001), a major problem with Haddon's formulation is that it takes little account of motivational issues, particularly purpose of journey, of which driving for work is a key element. The importance of purpose of journey data and its relationship with the Haddon Matrix should be explored further to add to the body of knowledge on corporate road safety, help understand the large and unexplored overlap between road safety and workplace safety, and to help enhance current approaches to road injury prevention, particularly relating to driving while at work. A quality review of road accident injury statistics is currently in process, and is likely to recommend that 'journey purpose' be included. A similar process is also at an advanced stage in Queensland in Australia. The following is an early version of the proposed coding system:

1. Driving to work.
2. Driving as part of work.
3. Driving from work.
4. Driving to educational facility with child/student/self.
5. Driving from educational facility with child/student/self.
6. Life necessities and social activities such as shopping, visiting, evening out, socialising.
7. Life enhancement activities such as sporting activities, hobbies, driving for pleasure.
8. Holidays and weekend away/tourism activities.
9. Other, specify.
10. Unknown.

Developing an easy to use IT- or web-based, pre-coded, relational database systems of vehicles, drivers and crashes would improve the recording process. The main problems with this are in operations with a high vehicle or staff turnover or high seasonality. Data protection regulations may also be an issue.

New knowledge and insights gained since the project was completed, particularly from an Australian perspective, will be integrated into any future project developments. This includes information from the Staysafe and Travelsafe Committees, the FORS Fleet Safety Manual, use of the Haddon Matrix (Williams 1999) as a structure for countermeasures, postcode-based GIS analysis of crash locations, lessons from 'Vision Zero', insurer-led benchmarking, the use of internet-based crash recording systems that link all levels of fleet management, the insurance broker and insurer.

Developing some of the findings that have emerged from this project.

- Focused research on company cars and buses.
- Agreeing on standard definitions of a crash, accident, incident and claim and what the cut off point is between that and wear and tear.
- The need for management development programmes in a range of areas.
- Insurer-led benchmarking of claims statistics.

- Work closely with a small number of fleets to analyse their claims data in detail and develop a set of best practice case studies.
- Working closely with insurers, AMCs and their professional bodies to develop agreed KPIs and standards.
- Overcoming the barriers to change.
- Review of NHS data on hospital admissions, based on an analysis of data from the new system where hospitals charge crash victims or their insurer.
- Evaluate the growing problem of third party personal injury claims and the growth of no win-no-fee schemes.
- Trust and honesty in crash investigation and cause identification given insurance requirements for establishing fault and not admitting liability.
- Using claims data more effectively for developing targeted risk management countermeasures.
- Development of guidance on 'how to share the road with LGVs'.
- Undertaking a controlled study of the effectiveness of different countermeasures.
- Further causation analysis.
- Focusing on improving reporting levels to reduce the amount of unreported damage.
- Understanding the cost structures of company vehicle crashes and effectively building them into the crash recording process so that the full benefits of countermeasures can be traded off against the costs. *'Costs'* were excluded from the new report and investigation form but should be a key element of an organisation's crash management database.
- Making international and other sector comparisons.
- Exploring the relationship between occupational health and road safety.
- Developing web- or intranet-based systems for capturing and using crash data. This process has been emerging amongst insurers and accident management companies during this project.
- Evaluating how effectively existing commercially available crash databases can be used for risk management.
- Assessing the use of 'black box' technology to capture pre-crash and at-scene information and to closely monitor the use of the vehicle.
- Linking the findings of this project to the outputs from the Work Related Road Safety Task Group.

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Appendix 4.1 - CoVIR bumpcard

This appendix is available separated for download

Appendix 4.2 - CoVIR accident reporting and investigation form

This appendix is available separated for download

Appendix 4.3 - Manual for the CoVIR accident reporting and investigation form

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Introduction

A best practice accident reporting and recording system should have an accident investigation procedure to identify causes, provide risk management data and hopefully prevent reoccurrence.

This manual, and the codes it contains, should be used to help managers and drivers complete the accident report and investigation form.

This document explains the reasons for collecting the information on the accident report and investigation form. The aim is for one generic form to cover all accident and vehicle operator types. This may mean that some elements on the form are not relevant to every operation. Use this document to help decide what data you should and should not collect.

Instructions in a box like this explain why the information is required. Instructions not in a box like this explain what data to collect.

The information requested is necessary for insurance, legal and risk management purposes. Please complete the form as fully and accurately as possible. Drivers should be encouraged to report all accidents, including any contact or alleged contact with another vehicle or object, either on- or off-road. All vehicle damage/defects should be reported and investigated

Near misses, general wear and tear and unreported damage should be reported verbally to the relevant supervisor or manager at the end of the shift.

THE FORM SHOULD BE COMPLETED IN BLOCK CAPITALS.

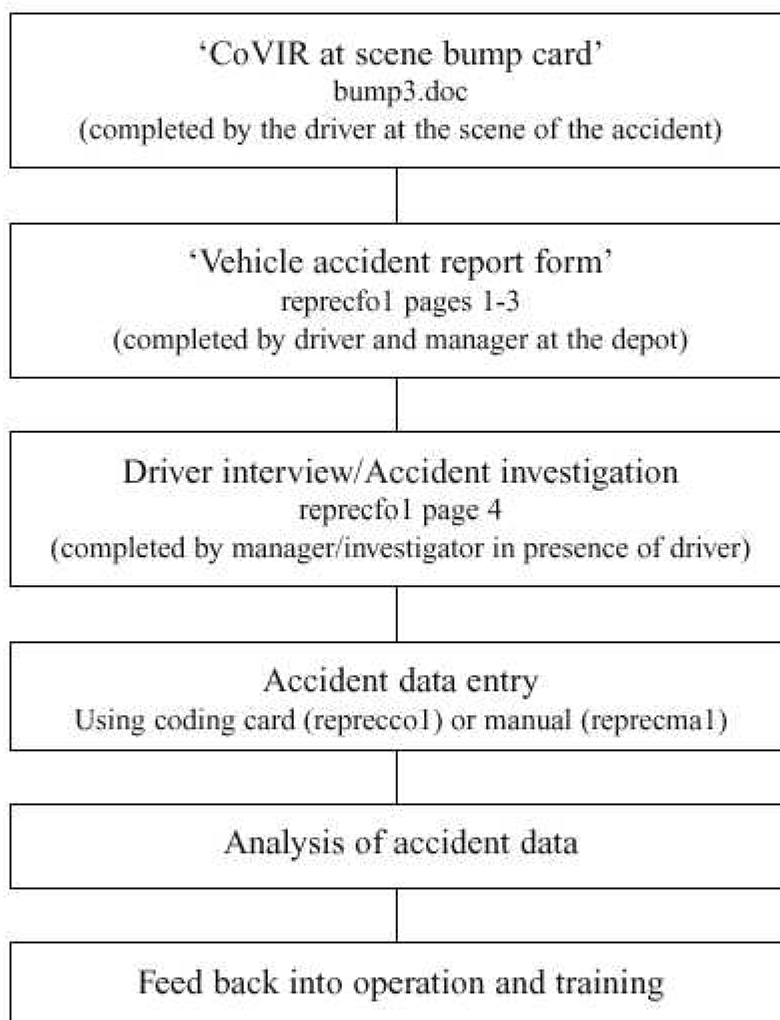
If you are in any doubt about how to proceed, please discuss it with your immediate supervisor/manager, or contact Dr Will Murray by emailing will.murray@ntu.ac.uk or calling 0115 848 4234.

This manual and the reporting and investigation form have the following structure.

- Management information
- Driver information
- Company vehicle
- Damage to other vehicle or property
- Details of accident
- Description and sketch of accident
- Police
- Persons injured
- Witnesses
- Investigator information
- Accident causation and type codes
- Actions to be taken
- Declaration

Accident, reporting, and recording procedures.

This will vary depending on the needs of individual participants.



Summary of documentation for the CoVIR pilot study

Document title	File name
CoVIR at scene bump card	Bump3
Vehicle accident report, investigation and recording form	Reprecfol
Manual for the accident report, investigation and recording form	Reprecmal
Summary coding card for completing the report, investigation and recording form	Repreccol

Electronic copies of all these files are available from the author by emailing will.murray@ntu.ac.uk or calling 0115 848 4234.

Management information (Page 1 of form)

This section covers management information about the accident. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Accident/claim reference number

This allows the accident to be reported, recorded, managed and analysed effectively by providing a unique reference number and allowing costs to be accurately allocated to the correct accident.

Drivers should ask their manager or supervisor for the accident number to enter. This is very important, because it allows the accident to be managed and analysed effectively.

Division/subsidiary

This allows you to allocate costs to and compare different parts of your own organisation.

State which division or subsidiary of the organisation the vehicle is operated by.

Depot/area/contract/branch/office/cost centre

This allows you to allocate costs to and compare different parts of your own organisation.

Enter your depot/office name or number.

Type of accident

This allows the level/type of accident to be identified quickly.

Tick the 'type of accident' (fatal, injury, damage only, theft, vandalism, fire, other) that best describes what happened.

Manager/supervisor's first name and surname (printed)

This is important to assess whether the attitude/skills of individual managers have any impact on accident rates and their effectiveness at accident reporting and recording. It also focuses their attention on the issue

Enter the first and surname of the manager or supervisor responsible for managing the accident in the individual spaces provided. Tick to confirm that the manager attended the scene of the accident.

Driver information (Page 1 of form)

This section collects information about the company driver. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible. It is important to verify what the driver reports and highlight any discrepancies.

First name and surname

Separate spaces for first and surname allow the driver to be clearly identified.

Clearly state your first and surnames in the individual spaces provided.

Employee number

A personal identification number (e.g. clock number, payroll number, National Insurance number, employee number or badge number) allows the driver to be clearly identified. Use whichever of those listed is the norm in your organisation.

Write in your personal identification number (e.g. clock number, payroll number, National Insurance number, employee number or badge number).

Home address, telephone

This allows easy contact with the driver out of work hours.

Write in your home address and the telephone number on which it is easiest to contact you.

Date of birth/Age/Gender

This allows analysis to be undertaken by age and gender. For detailed analysis, you would need to know the age and gender profile of all your drivers. Date of birth is a further check on driver identity.

Write in your current date of birth as day, month and year, i.e. 10 February 1965, and your age to the nearest year.

Purpose of journey

This allows analysis by type of journey. Not all of the codes may be relevant to your operation. Ignore or remove the ones that are not.

Select the ONE from the list below that best describes the reason for your journey.

1. Business (company car)
2. Delivery and collection
3. Personal/private)
4. Shunting
5. Trunking
6. Unknown
7. Other (please specify

Employee status

This allows analysis by type of employee. Not all of the codes may be relevant to your operation. Ignore or remove the ones that are not. For detailed analysis, you would need to know employee status of all your drivers.

Select the ONE from the list below that best describes your employee status.

1. Agency
2. Contract
3. Employee's family/friend
4. Full time employee
5. Managerial/Director
6. No driver
7. Owner driver
8. Part time employee
9. Unauthorised/Thief
10. Unknown
11. Other (please specify)

Driving licence number, type, groups, valid for vehicle and expiry date

Driving licence number is a further check on the individual driver and that the licence is still valid. Vehicle groups, licence validity and expiry date are necessary for insurance claims and legal purposes. For driving licence type, not all of the codes may be relevant to your operation. Ignore or remove the ones that are not.

Write in your driving licence number and type in the spaces provided. Select the ONE from the list below that best describes your licence type.

1. Car
2. Large goods vehicle (LGV)
3. No licence
4. Provisional
5. Passenger carrying vehicle (PCV)
6. Unknown
7. Other (please specify)

Tick whether your licence is valid for the vehicle you were driving at the time of the accident. Write in the expiry date of your licence as day, month and year i.e. 10 February 1965.

Years car driving licence held

This allows analysis based on driving experience.

Write in the number of years since you first passed your driving test.

Years in company

Drivers who are new to an operation/organisation often have a higher accident rate. Better data will allow this to be confirmed and action taken.

Write in the number of years that you have been working for the organisation whose vehicle you were driving at the time of the accident.

Years LGV licence held

This allows analysis based on driving experience in that type of vehicle. Drivers who are new to a vehicle type often have a higher accident rate. Better data will allow this to be confirmed and action taken.

Write in the number of years that you have held your large goods vehicle (LGV) licence.

Years since last driver training/assessment

Review the dates and content of the driver's previous training and assessment. This is important to show the effectiveness and cost efficiency of training and any deficiencies in it.

Write in the number of years since your last in or out of vehicle driver training or assessment.

Were you familiar with the accident location?

This allows analysis of the extent to which accidents occur in familiar/unfamiliar locations.

Tick whether or not you were familiar with the accident location. If you know the area well, and have driven there on a regular basis before, tick yes. If you do not know the area well tick no.

How many claims/other accidents have you had in the past five years?

The reference, date and type of all the driver's accidents in the past five years should be compared against the company records to identify any similarities. This allows analysis of a driver's accident record and the identification of any recurring patterns. It also helps to verify that the driver is being truthful.

State the number of insurance claims for accidents you have been involved in whilst driving a company vehicle during the past five years. Also, state the number of other accidents you have been involved in whilst driving a company vehicle during the past five years. Include all blameworthy and non-blameworthy accidents including any vehicle damage, contact or alleged contact with another vehicle, fixed object or moving object, both on- and off-road.

Number/type of motoring offences/convictions/fines in past five years

These should be compared against the company records to identify any similarities and linkages to the type of accident. This allows analysis of a driver's motoring record, and the identification of any recurring problems. It also helps to verify that the driver is being truthful, and means that a licence check is automatically part of the investigation.

Please write in details of any motoring convictions or fines that you have received in the past 5 years. Give details or the code number to show exactly what the offences were.

Any medical conditions you have that may affect your fitness to drive

This is required for insurance purposes.

Please describe any physical conditions, such as poor vision (needing to wear contact lenses or glasses) or hearing, physical or mental illnesses, disability, diabetes, fits or heart complaints that may have affected your driving. If you were taking any medication at the time of the accident, please state its name and what it was for.

Shift start and end time (24 hour clock)

This allows analysis of the time into the driver's shift that the accident occurred. The DfT is particularly keen on evaluating the impact of sleep and tiredness. If this is an issue, then further questions on sleep are required to be answered by the investigation.

Please write in the times that your shift started and ended in the spaces provided, based on the 24-hour clock. For example for 2-30 in the afternoon, state 14-30.

Company vehicle and property (Page 1 of form)

This section covers information about damage to your vehicle and company property. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Vehicle type, make, model and size

This allows analysis by type of vehicle. Not all of the codes may be relevant to your operation. Ignore or remove the ones that are not. For detailed analysis, you would need to know how many of each type of vehicle there are in your fleet.

Make, model and size of vehicle are important for insurance payout purposes, as well as analysis by vehicle type and size.

Select the ONE from the list below that best describes the vehicle you were driving.

1. Artic
2. Bus/coach/minibus
3. Car
4. Car transporter
5. Caravan/tent trailer
6. Crane
7. Draw bar
8. Forklift truck
9. Motorbike
10. Pick up
11. Refuse vehicle
12. Repair vehicle
13. Rigid
14. Tanker
15. Tipper
16. Tractor/unit only
17. Trailer only
18. Van
19. Unknown
20. Other (please specify)

Write in the make (e.g. Ford, Volvo, Scania, etc) and model of the vehicle you were driving. Write in the size (e.g. CC for cars and gross vehicle weight for commercials) of your vehicle.

Registration/fleet/trailer number

This allows analysis by specific vehicles and trailers.

Write in the registration number of your vehicle and the fleet/trailer number if a trailer is involved. If the vehicle has no registration number, for example for an uncoupled trailer or a shunt vehicle, write in its vehicle fleet/trailer number.

Year

This is important for valuation purposes and to assess any relationship between vehicle age and accident frequency.

Write in the year of manufacture of your vehicle/trailer.

Description of damage to company vehicle/property

A detailed description of the damage to your vehicle will identify any recurring damage types and highlight areas for action to be taken.

A description of any damage to company property, including fixed (e.g. buildings) and mobile objects (e.g. other vehicles) is important for costing and for highlighting any potential black spots.

Give a full description of the damage to your vehicle and load; and any damage to other company property, including both fixed (e.g. buildings) and mobile objects (e.g. other vehicles).

Photographs of accident/vehicles

Drivers must be trained in what to photograph. Photographs of vehicles in their impact position, damage to your own and third party vehicles/damage, skid marks and signposts are more objective than sketches and descriptions and give a visual record of the true extent of damage.

Photographs also help to confirm driver and third party evidence, identify existing damage and minimise the cost of third party claims. Cameras should be issued to and signed for by individual drivers rather than to vehicles to minimise the problem of theft.

Cameras can be very cost effective, with one accident often the payback. Pictures help prevent excessive third party claims and allow claims to be processed quicker and more accurately, which cuts down on hire charges for vehicle downtime. The photographs should become an integral part of the accident report form and reporting process. The report form therefore asks drivers why they have not taken photographs. Pictures should only be developed if the investigation/insurer requires them, so cameras are not being constantly changed. A trial at one site may be the most effective way to evaluate the usefulness and cost effectiveness of cameras, and whether to use disposable or reusable

State whether photographs were taken at the scene of the accident.

If a camera is available, discreetly photograph the scene from different angles. Include vehicles in their impact position, existing and new damage to your own and third party vehicles/property, skid marks and signposts.

Extent of damage

This allows the level/type of accident to be identified quickly.

Select the ONE from the list below that best describes the damage to your vehicle/company property.

1. No damage
2. Slight damage
3. Moderate damage
4. Severe damage
5. Write off/destroyed
6. Unknown
7. Other (please specify)

Pre-printed diagrams of angle of impact

This is important for insurance/liability purposes.

Mark the areas of damage (back, front, nearside or offside) to your vehicle on the diagram. The arrow points to the front of the vehicle.

Damage to other vehicle and property (Page 1 of form)

This section covers information about the third party vehicle(s) involved in the accident and any damage to third party property. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Tick how many third party vehicles were involved or whether only property damage was involved.

Vehicle type, make, model, size and colour

This allows analysis by type of vehicle. Not all of the codes may be relevant to your operation. Ignore or remove the ones that are not. For detailed analysis, you would need to know how many of each type of vehicle there are in your fleet.

Colour of third party vehicle is mainly collected in the bus industry. It allows a check that the third party vehicle being repaired is the vehicle actually involved in the accident.

Select the ONE from the list below that best describes the type of the third party vehicle.

1. Artic
2. Bus/coach/minibus
3. Car
4. Car transporter
5. Caravan/tent trailer
6. Crane
7. Draw bar
8. Forklift truck
9. Motorbike
10. No third party vehicle
11. Pick up
12. Refuse vehicle
13. Repair vehicle
14. Rigid
15. Tanker
16. Tipper
17. Tractor/Unit only
18. Trailer only
19. Van
20. Unknown
21. Other (please specify)

Write in the make (e.g. Ford, Volvo, Scania, etc) and model of the third party vehicle.

Write in size (e.g. CC for cars and gross vehicle weight for commercials) of the third party vehicle.

Write in the colour of the third party vehicle.

Registration number

This allows the third party vehicle to be identified.

Write in the registration number of the third party vehicle.

Description of damage to third party vehicle/property

A description of the damage to the third party vehicle and property is necessary for insurance and accident management purposes.

Give a detailed description of any damage to the third party's vehicle and other property (including buildings, etc).

Photographs of third party vehicle

Photographs are important to provide objective evidence and keep costs to a minimum.

State whether photographs were taken of the damaged third party vehicle or property.

Extent of damage

This allows the level/type of accident to be identified quickly.

Select the ONE from the list below that best describes the extent of the damage to the third party vehicle/property.

1. No damage
2. Slight damage
3. Moderate damage
4. Severe damage
5. Write off/destroyed
6. Unknown
7. Other (please specify)

Pre-printed diagrams of angle of impact

This is important for insurance/liability purposes.

Mark the areas of damage (back, front, nearside or offside) to the third party vehicle on the diagram.

Driver/owner name, approximate age and address

This is important for insurance, liability and communication purposes.

Write in the name, approximate age, address and telephone number of the third party driver.

If the owner is different to the driver, write in the name, address and telephone number of the third party vehicle/property owner.

Third party insurer details/insurance no

This is important for insurance, liability and communication purposes.

Record the name and address of the third party's insurance company and insurance policy number.

Details of the accident (Page 2 of form)

This section requires information about the accident. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Day, date and time (24 hour clock) of the accident

This is important for insurance/liability purposes and for accident monitoring and analysis.

Enter the day, date and time of the accident. For the time, please use a 24-hour clock. For example for 2-30 in the afternoon, state 14-30. For best data analysis, accident time should eventually be coded the to the nearest hour (i.e. 1-24).

Accident location

Accident location is important, because many accidents happen at the same sites. Is it a frequently visited site? Has a recent risk assessment been undertaken? Is there a trained banksman? Have delivery guidelines been prepared for the drivers? Delivery guidelines should be issued to drivers for all frequently visited locations. These can provide directions, state potential problems and help make the drivers aware how accidents are most likely to happen. Involving drivers in the development of these guidelines and undertaking risk assessment also helps them to buy into the process.

Road/location type

This allows analysis by the road/location, and the identification of any particular black spots and problem areas. Not all of the codes may be relevant to your operation. Ignore or remove the ones that are not.

Select the ONE from the list below that best describes the location type.

1. A road	6. Delivery point	11. Private road
2. B/minor road	7. Depot/own premises	12. Track

3. Bus stop/lay-by
4. Car park
5. Collection point
8. Driveway/garage
9. Dual carriageway
10. Motorway
13. Unknown
14. Other (please specify)

Town name

Town name is important to identify recurring locations. This will become increasingly important as health and safety regulations move more into transport, and regular risk assessments will be required, particularly at accident blackspots.

Write in the name of the town where the accident occurred. Please also try to state the postcode of the area, as this is very useful in showing recurring locations.

Road name

Helps to identify the accident location.

If the accident occurred on the road, state the road name (e.g. Viaduct Street) or number (e.g. A424).

Collision with

This allows analysis by collision type, and the identification of any recurring problems.

Select the one (s) from the list below that best describes what you collided with.

1. Animal
2. Bicycle
3. Car
4. Commercial vehicle
5. Fixed object
6. Motorbike
7. No other vehicle/object
8. Bus/coach/minibus
9. Pedestrian
10. Unknown
11. Other (please specify)

Manoeuvre

This allows analysis by manoeuvre type, and the identification of any recurring problems, such as reversing.

Select the ONE from the list below that best describes the manoeuvre being undertaken by your and the third party vehicles.

1. Changing lane to left
2. Changing lane to right
3. Manoeuvring - forwards
4. Manoeuvring - reversing
5. Moving off
6. Out of control
7. Overtaking
8. Parked/unattended
9. Proceeding normally
10. Slowing
11. Stationary
12. Stopping
13. Taking evasive action
14. Turning left
15. Turning right
16. U-turning
17. Unknown
18. Other (please specify)

Speed limit on road/site

This is important for insurance claims and legal purposes.

Enter the speed limit, in miles per hour (mph) imposed on the road or site at the accident location.

Speed of vehicles on approach to and during accident

This is important for insurance/liability purposes, and to assess the importance of speed as a cause of the accident.

Estimate the speed of your and the third party vehicle, on approach to the accident and on impact.

Width of road

This helps to verify whether the vehicle should have been where it was and the level of risks involved.

State the approximate width of the road in metres.

Road configuration

This allows analysis by road configuration, and the identification of any recurring problems.

Select the ONE from the list below that best describes road configuration at the accident location.

1. Bend
2. Bus lane
3. Crossroads
4. Filter lane/slip road
5. Junction signals not working
6. No junction
7. Offset junction
8. On-site
9. Pedestrian crossing
10. Road narrows/chicane
11. Road works
12. Roundabout
13. Stop/give way sign/lines
14. Straight road
15. T junction
16. Traffic lights
17. Unknown
18. Other (please specify)

Road conditions

This allows analysis by road conditions, and the identification of any recurring problems.

Select the ONE from the list below that best describes the road conditions at the accident location.

1. Dry
2. Flooded
3. Greasy
4. Icy
5. Muddy
6. Potholes/under repair
7. Rough terrain
8. Snow covered
9. Substance deposited on road
10. Wet/damp
11. Unknown
12. Other (please specify)

Weather conditions

This allows analysis by weather conditions, and the identification of any recurring problems.

Select the ONE from the list below that best describes the weather at the accident location.

1. Dull/overcast
2. Fine/sunny
3. Fog/mist
4. Hail
5. Rain
6. Sleet/snow
7. Strong winds
8. Unknown
9. Other (please specify)

Visibility

This allows analysis by visibility, and the identification of any recurring problems.

Select the ONE from the list below that best describes the visibility at the time of the accident.

1. Dazzling sunshine
2. Good
3. Fair
4. Poor
5. Very poor
6. Unknown
7. Other (please specify)

Light conditions

This allows analysis by light conditions, and the identification of any recurring problems.

Select the ONE from the list below that best describes the light conditions at the time of the accident.

1. Dark: no street lights
2. Dark: street lights unknown
3. Dark: street lights lit
4. Dark: street lights unlit
5. Daylight
6. Dusk/Dawn
7. Unknown
8. Other (please specify)

Lights displayed by company and other vehicle

This is important for insurance/liability purposes as it shows what, if any, efforts were made to avoid the accident.

Please tick the level of lights displayed by your vehicle and the third party vehicle.

Warning signals

This is important for insurance/liability purposes as it shows what efforts were made to avoid the accident.

Select the one (s) from the list below that best describes what warning signals were given by you and the third party.

Cause of accident

This is important because it gives the driver the opportunity to explain to the investigator, and sign off, exactly how and why the accident happened.

Describe, and tick, what you feel was the main cause of the accident.

1. Audible e.g. horn
2. Brake lights
3. Fog lights
4. Flashed lights
5. Hand
6. Hazard lights
7. Indicating left
8. Indicating right
9. No signals
10. Reversing lights
11. Unknown
12. Other (please specify)

Driver's description of accident

This is important because it allows drivers to describe what happened, which helps to understand how and why the accident occurred.

Write a report, in your own words, of how the accident happened. You should include any comments by witnesses or third parties. Use a separate sheet if necessary. This information helps understand how and why the accident occurred.

Driver's sketch of accident (Page 2 of form)

This allows a picture of the accident to be built up.

This section requires you to draw a sketch of the accident. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible. You should indicate clearly the (1) width and (2) names of roads, (3) position in road/direction travelled by all vehicles and persons before and on impact, (4) all skid marks, (5) the position of any obstacles/junctions/signs/road markings/traffic lights/roundabouts/pedestrian crossings) and (6) anything else having a bearing on the accident. Mark the registration number on each vehicle in the sketch.

Police (Page 3 of form)

Police information is important for legal and insurance purposes. Under the Road Traffic Act 1988, a vehicle accident is reportable to the police if injury is caused to another road user, damage is done to another vehicle or property, or to an animal other than any being carried inside the vehicle. ('Animal' means horse, cattle, ass, mule, sheep, pig, goat or dog). The driver must stop if injury has been caused to another road user and must report the accident to a police constable or at a police station as soon as is reasonably practicable, and in any event, within 24 hours. Failure to do so could result in up to 10 penalty points on his/her licence and a fine of up to £5,000 and/or imprisonment.

In damage-only accidents drivers must, if reasonably practical, inform the property owner

The driver is obliged to give his/her name, address, the name and address of the owner of the vehicle, the vehicle's registration number and produce the insurance certificate. If details are not exchanged and there is injury to a third party, the drivers involved are required to report the accident to the police as soon as possible, and in any case within 24 hours of the accident, except where details are given to the police at the time of the accident. The driver may be required to produce his/her driving licence and certificate of insurance for inspection by the police officer.

This section covers police actions after the accident. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Was the accident reported to the police?

Tick whether the accident was reported at the scene, at a police station or not reported. If the accident was not reported explain why not and go on to the next section of the form.

Date and time reported

Write in the date and time (24 hour clock) that the accident was reported.

Incident number

Write in the police crime or reference number given to the accident.

Reporting officer name and number

Write in the full name and number of the police officer that the accident was recorded by.

Breath/blood/urine tests

Tick whether you or any third parties were breath or blood/urine tested and write in the results.

Did police threaten prosecution?

Tick whether you or the third party were threatened with prosecution and write in further details about the offence.

Station

Write in the name, address and telephone number of the reporting officer's station.

Persons injured (Page 3 of form)

This section requires information about the people injured in the accident. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Injury information is important for insurance claims and legal purposes.

Name, address and telephone number

Write in the name, address and telephone number of each person injured in the accident.

Status of injured

Select the ONE from the list below that best describes the status of each person injured.

1. Driver
2. Third party driver
3. Passenger in company vehicle
4. Passenger in third party vehicle
5. Cyclist
6. Pedestrian
7. Unknown
8. Other (please specify)

Injured age

Write in the approximate age of each person injured in the accident.

Injury type

Select the ONE from the list below that best describes the type of each person/s injury.

1. Back
2. Head
3. Limbs
4. Whiplash

5. Unknown
6. Other (please specify)

Level of injuries

Select the ONE from the list below that best describes the level of each person's injury.

1. Slight
2. Serious
3. Fatal
4. Unknown
5. Other (please specify

A fatal injury involves a death within 30 days of the accident. A serious injury involves being retained overnight in hospital or any of the following: fractures, concussion, crushing, severe cuts, lacerations, severe whiplash or shock. A slight injury involves a sprain or minor cuts, shocks or minor whiplash.

Hospitalised?

State (Yes or No) whether the person was hospitalised.

Seatbelts/helmets worn by all parties?

State whether a seatbelt (or helmet) was worn by the person injured at the time of the accident.

Witnesses (Page 3 of form)

Witness information is important for managing the insurance claims process.

This section covers the contact details of accident witnesses. It is to your and the company's advantage for it to be completed as honestly, fully and accurately as possible.

Name, address and telephone number

Write in the name, address and telephone number of each witness to the accident.

Location/status of witnesses

Select the ONE from the list below that best describes the location/status of each witness.

Whose witness

State whether the witness is yours or the third parties.

1. Company employee
2. Pedestrian
3. Third party passenger
4. Your passenger (non-employee)
5. Unknown
6. Other (please specify)

Investigator information (Page 4 of form)

Interviewer name and position

Clearly write in the name and job title of the interviewer. This helps to make them accountable for the quality and outcomes of the investigation.

Interview date and location

Write in the date and location of the interview.

Bumpcard used and accident reporting procedures followed by driver?

This makes sure that details have been exchanged with any third parties and helps to verify that the driver has reported the accident fully and correctly, and identifies any problems with the procedure.

State whether a bumpcard was completed by the driver at the scene of the accident and details exchanged with the third party.

Camera used by driver at scene?

Photographs are important for obtaining an objective visual record. This question verifies that the driver has taken pictures at the scene, and identifies any problems with the procedure for doing so.

Results of tachograph examination

For all vehicle types that have tachographs, write in the key results from the tachograph examination. The tachograph can help to verify the driver's information, establish how and at what speed the vehicle was being driven, and for how long the driver had been driving before the accident. Although tachographs may not always be 100% reliable and can be badly interpreted, an examination is better than just ignoring the information.

Interviewer/driver's agreed explanation of why accident occurred

The interviewer and driver should write an agreed description of how and why the accident occurred.

Driver admits responsibility/does not admit responsibility

Tick whether the driver admits full or partial responsibility for the accident or not.

Driver blameworthy/non-blameworthy

Some companies prefer the language 'avoidable and unavoidable', others have a range of codes from 'not at fault, through partially at fault to totally at fault'. Blameworthy/ non-blameworthy are used here because that is the most common language at the present time used by most of the companies in the CoVIR project. A simple and effective approach used by many companies is that if they 'pay out' any money to a third party (or are likely to have to pay out in the future), then they are at fault and the driver should be deemed blameworthy.

Tick whether you feel that the driver was blameworthy or not. If you feel the driver was partially to blame, write in the percentage.

Accident causation and type codes (Page 4 of form)

The CoVIR project has identified three levels for coding the types and causes of vehicle accidents. These are 'accident types', 'precipitating factors' and 'contributory factors'. The investigation form allows you to pick the most appropriate ONE of each and to state how confident (A = definite, B = probable, C = possible) you are in them.

Write in the 'accident type' first. Next, work back from the actual impact to identify the main event or failure that led directly to the accident and write in the precipitating factor. From the information available, you should then identify the appropriate contributory factors.

Accident type

Accident type describes the accident. After reviewing all the codes presented during the CoVIR project, no standard system emerged, and it was impossible to rationalise them into one new overall approach. For this reason the following codes have been based on the TNT system.

Write in the ONE of the following codes that best describes the accident type.

TURNING/FORWARD MOVEMENT

1. Colliding with vehicle in front - inattention/travelling too fast/travelling too close
2. Misjudgement when turning left
3. Misjudgement when turning right
4. Misjudgement when moving off and colliding with parked vehicle/ object
5. Entering major road when unsafe to do so
6. Failure to comply to signs/signals

OVERTAKING

7. Misjudgement when overtaking vehicle parked on nearside
8. Misjudgement when overtaking vehicle parked on offside
9. Misjudgement when passing between two lines of parked vehicles
10. Misjudgement when overtaking moving vehicle on nearside
11. Misjudgement when overtaking moving vehicle on offside

LANE DISCIPLINE

12. Misjudgement when changing lanes to left
13. Misjudgement when changing lanes to right
14. Failure to keep lane discipline

HEIGHT

15. Misjudging height of obstacles when going forwards
16. Misjudging height of obstacles when reversing

REVERSING

17. Colliding with vehicle when reversing at premises
18. Colliding with object when reversing at premises
19. Colliding with vehicle when reversing prior to setting off
20. Colliding with object when reversing prior to setting off

BENDS

21. Travelling into bend and oncoming vehicle over centre
22. Our vehicle travelling into bend and loses control

MISCELLANEOUS

23. Accident caused by animal running into road
24. Accident caused by pedestrian running/ walking into road
25. Opening door in presence of oncoming traffic
26. Damage caused to vehicle/ property through unloading
27. Damage caused by load shifting
28. Damage caused by failure to connect trailer properly
29. Failure to apply handbrake
30. Accident caused by alleged vehicle defect - specify
31. Third party failed to stop
32. Damaged whilst parked
33. Other (please specify)

THEFT

34. Theft of radio
35. Theft of other property
36. Attempted theft - nothing stolen
37. Theft of vehicle

Precipitating factors

The Transport Research Laboratory (TRL) has developed precipitating factors for the DTLR. They identify what went wrong and summarise the actions that led directly to the accident. The list of precipitating factors includes both failures and manoeuvres by road users. Normally only one precipitating factor should be chosen per accident. In other words, if this had not been present, the accident would probably not have occurred.

Write in the ONE of the following codes that best describes what precipitated the accident.

Failure of driver or rider:

1. Failed to stop (mandatory sign)
2. Failed to give way
3. Failed to avoid pedestrian (pedestrian not to blame)
4. Failed to avoid vehicle or object in carriageway
5. Failure to signal/misleading signal
6. Failed to apply handbrake
7. Failed to attach trailer/equipment properly
8. Failed to keep good lane discipline
9. Failed to park in a safe place
10. Failed to judge width correctly
11. Loss of control of vehicle

Failures of pedestrian or passenger:

12. Pedestrian entered carriageway without due care
13. Passenger fell in or near PCV

Manoeuvres:

14. Swerved to avoid object in carriageway
15. Sudden braking
16. Poor turn/manoeuvre
17. Poor overtaking
18. Drove wrong way (e.g. one way street)
19. Opening door carelessly
20. Other (please specify)

Contributory factors

TRL has developed contributory factors for the DTLR. They identify the causes of the precipitating factors. Contributory factors cover personal details, pedestrians, driver details, vehicle defects, local conditions, obscuration and animal involvement. If the main contributory factor had not been present, the accident would probably not have occurred. The contributory factors are largely subjective and based on judgement. They depend on the skill and experience of the investigator to reconstruct the events that led directly to the accident.

Write in the ONE of the following codes that best describes what contributed to the accident.

Personal details:

1. Impairment - alcohol
2. Impairment - drugs
3. Impairment - fatigue
4. Impairment - illness
5. Impairment - eyesight
6. Impairment - sneezing fit, epilepsy, asthma or heart attack
7. Distraction - stress/emotional state of mind

28. Aggressive driving/road rage
29. Lack of judgement of own path

Vehicle defects:

30. Tyres - wrong pressure
31. Tyres - deflation before impact
32. Tyres - worn/insufficient tread
33. Defective lights or signals
34. Defective brakes

8. Distraction - physical in/on vehicle

9. Distraction - physical outside vehicle

10. Distraction - use of mobile phone or mobile data terminal

11. Behaviour - panic

12. Behaviour - careless/thoughtless/ reckless

13. Behaviour - nervous/uncertain

14. Behaviour - in a hurry

15. Failure to judge other person(s) path or speed

16. Disability

17. Failed to look

18. Looked but did not see

19. Inattention

20. Person hit wore dark or inconspicuous clothing

Pedestrian details:

21. Crossed from behind parked vehicles, etc

22. Ignored lights at crossing

Driver Details:

23. Excessive speed

24. Following too close

25. Inexperience of driving

26. Inexperience of vehicle

27. Interaction or competition with other road users

Local conditions:

35. Site details - poor road surface

36. Site details - poor or no street lighting

37. Site details - inadequate signing

38. Site details - steep hill

39. Site details - narrow road

40. Site details - bend/winding road

41. Site details - roadworks

42. Slippery road

43. Earlier accident

Obscuration:

44. View - windows obscured

45. View - glare from sun

46. View - glare from headlights

47. Surroundings - bend/winding road

48. Surroundings - stationary or parked vehicle

49. Surroundings - moving vehicle

50. Surroundings - buildings/fences/ vegetation etc

51. Weather (e.g. high winds, mist or sleet)

52. Failed to see pedestrian or vehicle in blind spot

Animal involvement:

53. Animal out of control

54. Other (please specify)

The DfT is particularly interested in accidents involving sleep and tiredness as a contributory factor. If sleep/tiredness is suspected or identified, the investigation should be developed further by asking the following questions (source: several project participants).

Hours driven and on duty (without sleep) before the accident?

Hours worked/driven in past 48?

No of stops (collections and deliveries) made and hours worked in shift before accident?

Number of hours of last sleep?

Quality of driver's last sleep: good/restful, adequate, poor/disturbed?

Nature of driver's activities before starting the shift?

Any problems with sleep apnoea?

What other work (as well as driving) has the driver been undertaking on that day?

How much time has the driver spent driving to and from work?

Length of time since driver's last rest break?

What is the driver's state of mind?

What is the driver's shift pattern?

How could the accident have been avoided?

Based on the investigation, describe how the accident could have been avoided.

Actions to be taken (Page 4 of form)

Describe the actions to be taken as a result of the accident and the investigation. Some examples are shown in the list below. A timescale for achievement should also be stated.

1. Driver assessment
2. Driver counselling
3. Driver discipline
4. Driver drugs test
5. Driver eye test
6. Driver health check
7. Driver training/retraining
8. Management training
9. Prepare delivery guidelines for frequently visited sites
10. Remove driver from driving duties
11. Review induction and training for drivers
12. Review management and supervision
13. Review operating, equipment or maintenance procedures
14. Review risk management and safe systems of work
15. Review vehicle servicing
16. Review vehicle specification
17. Review work schedules for drivers
18. Review yard layout
19. Risk assess all frequently visited sites
20. Risk assess the particular site
21. Sleep investigation
22. Undertake a safety audit
23. Other (please specify)
24. No further action required

Declaration (Page 4 of form)

The final section covers the manager and the driver's declaration and signing of the form. When the driver completes and hands you the form, please read carefully and understand the declaration, sign and date it, and administer it in the normal way.

Manager/interviewer's signature

The interviewer's signature confirms that they have interviewed the driver, examined the accident report form, allocated the relevant blameworthy and type codes and identified an appropriate course of action to take.

A senior company official's signature shows that management has been made aware of an accident when it occurs, and has undertaken an investigation. There is also an argument for including the depot manager's name on the accident recording system, as a way of focusing their attention on the issue.

Driver's signature

The driver's signature confirms agreement that all the details are correct and prevents the form being completed without their consent or knowledge.

Date form completed

The date the form was completed is very important for monitoring 'time to report' the accident, particularly in light of the recent Woolf Reforms aimed to speed up the accident reporting and insurance process.

Appendix 4.4 - CoVIR accident reporting and investigation coding card

CoVIR Accident reporting and recording form codes

Where there are *italics* on the form select the ONE most appropriate from below.

Purpose of journey

1. Business (company car)
2. Delivery and collection
3. Personal/private
4. Shunting
5. Trunking
6. Unknown
7. Other (please specify)

Employee status

1. Agency
2. Contract
3. Employee's family/friend
4. Full time employee
5. Managerial/Director
6. No driver
7. Owner driver
8. Part time employee
9. Unauthorised/Thief
10. Unknown
11. Other (please specify)

Driving licence type

1. Car

2. Large goods vehicle (LGV)

3. No licence

4. Provisional

5. Passenger carrying vehicle (PCV)

6. Unknown

7. Other (please specify)

Vehicle type (own and third party)

1. Artic

2. Bus/coach/minibus

3. Car

4. Car transporter

5. Caravan/tent trailer

6. Crane

7. Draw bar

8. Forklift truck

9. Motorbike

10. Pick up

11. Refuse vehicle

12. Repair vehicle

13. Rigid

14. Tanker

15. Tipper

16. Tractor/unit only

17. Trailer only

18. Van

19. Unknown

20. Other (please specify)

Extent of damage (own and third party

1. No damage

2. Slight damage

3. Moderate damage

4. Severe damage

5. Write off/destroyed

6. Unknown

7. Other (please specify)

Location/road type

1. A road
2. B/minor road
3. Bus stop/lay-by
4. Car park
5. Collection point
6. Delivery point
7. Depot/own premises
8. Driveway/garage
9. Dual carriageway
10. Motorway
11. Private road
12. Track
13. Unknown
14. Other (please specify)

Collision with

1. Animal
2. Bicycle
3. Car
4. Commercial vehicle
5. Fixed object
6. Motorbike
7. No other vehicle/object
8. PCV
9. Pedestrian
10. Unknown
11. Other (please specify)

Manoeuvre

1. Changing lane to left
2. Changing lane to right
3. Manoeuvring - forwards
4. Manoeuvring - reversing
5. Moving off

6. Out of control
7. Overtaking
8. Parked/unattended
9. Proceeding normally
10. Slowing
11. Stationary
12. Stopping
13. Taking evasive action
14. Turning left
15. Turning right
16. U-turning
17. Unknown
18. Other (please specify)

Road configuration

1. Bend
2. Bus lane
3. Crossroads
4. Filter lane/slip road
5. Junction signals not working
6. No junction
7. Offset junction
8. On-site
9. Pedestrian crossing
10. Road narrows/chicane
11. Road works
12. Roundabout
13. Stop/give way sign/lines
14. Straight road
15. T junction
16. Traffic lights
17. Unknown
18. Other (please specify)

Road conditions

1. Dry

2. Flooded

3. Greasy

4. Icy

5. Muddy

6. Potholes/under repair

7. Rough terrain

8. Snow covered

9. Substance deposited on road

10. Wet/damp

11. Unknown

12. Other (please specify)

Weather conditions

1. Dull/overcast

2. Fine/sunny

3. Fog/mist

4. Hail

5. Rain

6. Sleet/snow

7. Strong winds

8. Unknown

9. Other (please specify)

Visibility

1. Dazzling sunshine

2. Good

3. Fair

4. Poor

5. Very poor

6. Unknown

7. Other (please specify)

Light conditions

1. Dark: no street lights

2. Dark: street lights unknown

3. Dark: street lights lit

4. Dark: street lights unlit

5. Daylight
6. Dusk/dawn
7. Unknown
8. Other (please specify)

Warning signals

1. Audible e.g. horn
2. Brake lights
3. Fog lights
4. Flashed lights
5. Hand
6. Hazard lights
7. Indicating left
8. Indicating right
9. No signals
10. Reversing lights
11. Unknown
12. Other (please specify

Status of injured

1. Cyclist
2. Driver
3. Passenger in company vehicle
4. Passenger in third party vehicle
5. Pedestrian
6. Third party driver
7. Unknown
8. Other (please specify)

Injury type

1. Back
2. Head
3. Limbs
4. Whiplash
5. Unknown
6. Other (please state)

Level of injuries

1. Slight
2. Serious
3. Fatal
4. Unknown
5. Other (please specify)

Location/status of witnesses

1. Company employee
2. Pedestrian
3. Third party passenger
4. Your passenger (non employee)
5. Unknown
6. Other (please specify)

Accident type

TURNING/ FORWARD MOVEMENT

1. Colliding with vehicle in front - inattention/travelling too fast/travelling too close
2. Misjudgement when turning left
3. Misjudgement when turning right
4. Misjudgement when moving off and colliding with parked vehicle/ object
5. Entering major road when unsafe to do so
6. Failure to comply to signs/signals

OVERTAKING

7. Misjudgement when overtaking vehicle parked on nearside
8. Misjudgement when overtaking vehicle parked on offside
9. Misjudgement when passing between two lines of parked vehicles
10. Misjudgement when overtaking moving vehicle on nearside
11. Misjudgement when overtaking moving vehicle on offside

LANE DISCIPLINE

12. Misjudgement when changing lanes to left
13. Misjudgement when changing lanes to right
14. Failure to keep lane discipline

HEIGHT

15. Misjudging height of obstacles when going forwards
16. Misjudging height of obstacles when reversing

REVERSING

17. Colliding with vehicle when reversing at premises
18. Colliding with object when reversing at premises
19. Colliding with vehicle when reversing prior to setting off
20. Colliding with object when reversing prior to setting off

BENDS

21. Travelling into bend and oncoming vehicle over centre
22. Our vehicle travelling into bend and loses control

MISCELLANEOUS

23. Accident caused by animal running into road
24. Accident caused by pedestrian running/walking into road
25. Opening door in presence of oncoming traffic
26. Damage caused to vehicle/property through unloading
27. Damage caused by load shifting
28. Damage caused by failure to connect trailer properly
29. Failure to apply handbrake
30. Accident caused by alleged vehicle defect - specify
31. Third party failed to stop
32. Damaged whilst parked
33. Other (please specify)

THEFT

34. Theft of radio
35. Theft of other property
36. Attempted theft - nothing stolen
37. Theft of vehicle

Precipitating factors

Failure of driver or rider:

1. Failed to stop (mandatory sign)
2. Failed to give way
3. Failed to avoid pedestrian (pedestrian not to blame)
4. Failed to avoid vehicle or object in carriageway
5. Failure to signal/misleading signal
6. Failed to apply handbrake
7. Failed to attach trailer/equipment properly
8. Failed to keep good lane discipline

9. Failed to park in a safe place

10. Failed to judge width correctly

11. Loss of control of vehicle

Failures of pedestrian or passenger:

12. Pedestrian entered carriageway without due care

13. Passenger fell in or near PCV

Manoeuvres:

14. Swerved to avoid object in carriageway

15. Sudden braking

16. Poor turn/manoeuvre

17. Poor overtaking

18. Drove wrong way (e.g. one way street)

19. Opening door carelessly

20. Other (please specify)

Contributory factors

Personal details:

1. Impairment - alcohol

2. Impairment - drugs

3. Impairment - fatigue

4. Impairment - illness

5. Impairment - eyesight

6. Impairment - sneezing fit, epilepsy, asthma or heart attack

7. Distraction - stress/emotional state of mind

8. Distraction - physical in/on vehicle

9. Distraction - physical outside vehicle

10. Distraction - use of mobile phone or mobile data terminal

11. Behaviour - panic

12. Behaviour - careless/thoughtless/ reckless

13. Behaviour - nervous/uncertain

14. Behaviour - in a hurry

15. Failure to judge other person(s) path or speed

16. Disability

17. Failed to look

18. Looked but did not see

19. Inattention

20. Person hit wore dark or inconspicuous clothing

Pedestrian details:

21. Crossed from behind parked vehicles, etc

22. Ignored lights at crossing

Driver details:

23. Excessive speed

24. Following too close

25. Inexperience of driving

26. Inexperience of vehicle

27. Interaction or competition with other road users

28. Aggressive driving/road rage

29. Lack of judgement of own path

Vehicle defects:

30. Tyres - wrong pressure

31. Tyres - deflation before impact

32. Tyres - worn/insufficient tread

33. Defective lights or signals

34. Defective brakes

Local conditions:

35. Site details - poor road surface

36. Site details - poor or no street lighting

37. Site details - inadequate signing

38. Site details - steep hill

39. Site details - narrow road

40. Site details - bend/winding road

41. Site details - roadworks

42. Slippery road

43. Earlier accident

Obscuration:

44. View - windows obscured

45. View - glare from sun

46. View - glare from headlights

47. Surroundings - bend/winding road

48. Surroundings - stationary or parked vehicle

49. Surroundings - moving vehicle

50. Surroundings - buildings/fences/ vegetation etc

51. Weather (e.g. high winds, mist or sleet)

52. Failed to see pedestrian or vehicle in blind spot

Animal involvement:

53. Animal out of control

54. Other (please specify)

Appendix 4.5 - Codes for underlying causes

1. Animal/pedestrian entered road without warning
2. Driver behaviour (for example thoughtless, panicked, reckless, careless)
3. Driver distracted
4. Driver emotional
5. Driver eyesight
6. Driver fatigued
7. Driver in a hurry
8. Driver indisposed (for example due to sneezing fit, epilepsy, asthma or heart attack)
9. Driver inexperienced
10. Driver inexperienced on particular vehicle
11. Driver under influence of alcohol
12. Driver under influence of drugs
13. Driver under severe stress
14. Failure to attach trailer/equipment properly
15. Hit unavoidably by third party
16. Inadequate management/supervision
17. Inadequate risk management systems
18. Inadequate training for drivers
19. Inadequate work instructions for drivers
20. Inadequate/unrealistic work schedules for drivers
21. Poor driving
22. Vehicle failure/defect/design
23. Unknown
24. Other (please specify)

Appendix 5.1 - Crash reporting and recording self-audit

Analysis of corporate road safety in both Australia and the UK (Murray 2001, Murray and Rand 2000, Wright 1997, Murray and Dubens 2000, Boyle 1999 and Queensland Transport 1999) suggests that crash reporting and recording is a key starting point for being able to evaluate, standardise, benchmark and improve the safety performance of vehicle fleets.

General and specific safety self-audits (for example Queensland Transport 1999, Savage and Moses 1994 and 1995, www.fmcsa.dot.gov/rulesregs/fmcsr/regs/385appb.htm, Murray 1999, Brake 2000) have already been successfully implemented. The following company vehicle crash reporting and recording self-audit has been developed to allow managers to quickly understand 'where they are now' and any gaps in their system as a starting point. It follows the structure of the Haddon Matrix (Haddon 1980) in covering **pre-crash, at-scene and post-crash questions. It also covers longer term crash analysis and key performance indicators (KPIs).** The audit is designed to be answered for an organisation as a whole or can be circulated to managers, supervisors and possibly drivers to obtain the local picture and provoke discussion.

ording (CoVIR)

1	Pre-crash audit questions (please tick yes or no)	Yes	No
1.	Do all your managers/depots have a loss control/depot procedures manual that includes vehicle crash management?	☐	☐
2.	Do you have a policy in place to investigate all crashes, with trained managers operating to company guidelines based on the severity and level of the crash?	☐	☐
3.	Do you assess the driving and attitude of all new and temporary employees who will be driving for work as part of the recruitment process?	☐	☐
4.	Does your new employee induction programme include: what to do in the event of a crash, crash reporting procedures for fatalities, injuries, damage only and near hits, contact numbers and insurance details?	☐	☐
5.	Are all new employees who drive for work trained on crash costs, completing a crash report form, the importance of getting third party details and crash reporting?	☐	☐
6.	Do all new employees who drive for work operate for a few days with a more experienced driver?	☐	☐
7.	Do all employees who drive for work receive a handbook which includes detailed written procedures for what to do at the crash scene, including admitting liability or not, reporting and bump/prompt cards to manage the scene, record the crash and exchange details with witnesses and third parties?	☐	☐
8.	Do all employees who drive for work or vehicles have a crash pack, including (a) a standard insurance crash report form, (b) a depot/site level minor damage report form, (c) bumpcard and (d) disposable camera?	☐	☐
9.	Are all employees who drive for work assessed and appropriately trained on a rolling programme?	☐	☐
10.	Are your own and frequently visited sites risk assessed/rated by drivers and managers?	☐	☐
11.	Are briefing packs/delivery guidelines including photographs, video or CD-ROM, available for each delivery/collection point and other regularly visited sites?	☐	☐
12.	Do all employees who drive for work complete a vehicle circle check form at start of drive and report any defects or damage, which must be signed off by a supervisor?	☐	☐
13.	Do you have regular poster and wage slip campaigns, notices and newsletters covering crash reporting?	☐	☐
	Total (count and write in the number of yeses)	☐	☐

2	At-scene audit questions (please tick yes or no)	Yes	No
14.	Are your minor crashes dealt with by the driver, who should manage the scene using your guidance notes, procedures booklet or bumpcard and then continue the trip if possible?	☐	☐
15.	Do all employees who drive for work report in to line manager using mobile communication ASAP and complete a short crash report form/bumpcard at-scene?	☐	☐
16.	If you operate a call centre-based operation, when the driver phones the 24/7/365 helpline does the system automatically check driver/vehicle details against the fleet database, complete these elements of the report form and add a crash code automatically?	☐	☐
17.	Are major crashes (for example RIDDOR level injury or fatality) attended by management staff ASAP to manage the scene, support the driver, investigate, gather evidence, impound and inspect the vehicle, produce a detailed report and implement your PR damage limitation/investigative escalation process?	☐	☐
18.	Do all your crash-involved employees exchanges details (name, address, phone number, insurance) with third parties, know and implement your policy on admitting liability and collect as much information as possible using bumpcards?	☐	☐
19.	Do all your crash-involved employees get witness statements and details?	☐	☐
20.	Do all your crash-involved employees record the name and number of any Police officers involved?	☐	☐
21.	Do all your crash-involved employees take photographs of vehicles and the scene?	☐	☐
	Total (count and write in the number of yeses)	☐	☐

3	Post-crash audit questions (please tick yes or no)	Yes	No
22.	Are all your injury and major property damage (or tow-away crashes) crashes reported to the Police and or HSE as soon as is practical?	☐	☐
23.	Are all your drivers debriefed and vehicles inspected for damage at the end of each shift?	☐	☐
24.	Are crash report forms and/or claims forms completed by driver (and supervisor?) as soon as possible?	☐	☐
25.	Do you have processes in place for recording and managing unreported damage found, crashes under your insurance excess and third party claims and complaints that have not been reported by your own staff?	☐	☐
26.	Are all your crashes allocated a unique reference/claim number so costs can be linked to the relevant crash and charged to the appropriate budget?	☐	☐
27.	Do you insist that a report form must be completed and crash code allocated before another vehicle is provided?	☐	☐

Scoring

Score 1 point for each 'yes' and for each KPI that you monitor.

The higher your score on the audit, the more effective your crash reporting and recording system will be. The lower your score, the more at risk you are of not being able to effectively analyse and understand your crashes, be exposed to higher costs and legal problems through not having safe systems of work in place and failing to fulfil your duty of care requirements. Many companies begin to take crash reporting and recording seriously only after they have suffered a major crash. The audit set out above will help you to identify your strengths and weaknesses and take **positive/proactive** steps to prevent this happening. The audit should be applied to the design of all new sites and operations and at existing sites on at least an annual basis.

Further reading

1. Boyle A (1999) The collection and use of accident data, Chapter 11 in Ridley J and Channing J **Safety at work,** Butterworth-Heinemann, Oxford, UK
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5. Murray W and Dubens E (2000), **Steering your business safely: Creating a crash free culture,** 4Di, Brighouse, UK
6. Murray W, Mills J and Moore P (1998) Reversing accidents in UK transport fleets. Research report sponsored by Brigade Electronics and supported by Brake. **Department of Transport and Logistics, University of Huddersfield,** May 1998 ISBN 186218016 4
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9. Santos company documentation on lead and lag indicators for safety, 2001
10. Savage I and Moses L (1994). The effect of firm characteristics on truck accidents. **Accident Analysis and Prevention,** Vol. 26 (2), pp173-179
11. Savage I and Moses L (1995) Cost-benefit analysis of United States motor carrier safety programmes, **Department of Economics and the Transportation Center Northwestern University, Department of Economics,** Evanston USA, Working paper
12. Savage I and Moses L (1995) A strategy for identifying dangerous trucking firms, **Department of Economics and the Transportation Center Northwestern University, Department of Economics,** Evanston USA, Working paper
13. Wright L (1997) The accident management perspective, Paper presented at the **University of Huddersfield Second Reducing Commercial Vehicle Accidents Conference,** 8 July, 1997
14. www.fmcsa.dot.gov/
    US Department of Transport SafeStat

Crash reporting and recording audit evaluation form

Please complete and return this form to us as soon as possible.

Reviewer's name ______________________________ Date ______________

Company ____________________ Telephone ____________ Email _________________

Describe your first impressions of the audit

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Evaluate the usefulness of the audit

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Rate the overall quality of the audit

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How would you suggest that we should improve the audit?

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Any other comments about the audit

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What soundbite summary would you use to promote the audit?

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Thanks for taking part in our quality evaluation process. Fax or email this form back to:

Dr Will Murray, will.murray@ntu.ac.uk, fax: 0115 848 6037